ANNUAL REPORT

OF THE

ARCHÆOLOGICAL SURVEY OF INDIA

1927-28

EDITED BY

H. HARGREAVES,
Officiating Director General of Archæology in India.



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INTRODUCTION

FOR over twenty-six years Sir John Marshall has been Director General of Archæology in India and has edited all, save six, of the Annual Reports which have been issued since the date of his appointment. During his unusually prolonged period of office as Director General he has acquired an unrivalled knowledge of the monuments and antiquities of India, knowledge which none of his successors holding the appointment for a few years at the end of their service can ever hope to obtain. During these twenty-six years the Archæological Survey has continually extended its activities and responsibilities until the whole attention of the Director General is now absorbed in routine administrative duties. It was felt by the Government of India that the burdening of Sir John Marshall with such duties was detrimental to the interests of Indian Archæology, and in September 1928 he was placed on Special Duty in order to provide him with an opportunity of writing and publishing the materials collected by the Archæological Department and himself during his long period of office. While on Special Duty Sir John Marshall will write a series of books on the excavated remains of Mohenjodaro, Harappa and Taxila as well as on the monuments of Sanchi, Mandu, Delhi, Agra and Multan. At the same time he will continue to hold charge of the excavations at Taxila which have been under his direct control for sixteen years and also co-ordinate the results of the operations of the Archæological Department at the prehistoric sites of the Indus and allied cultures. In consequence of the departmental changes result-

ing from Sir John Marshall's deputation on Special Duty the editing of this Report has devolved upon his successor.

In the last Report the Director General gave a brief résumé of the policy of the Department in the matter of the rival claims of conservation, exploration, research and epigraphy, and pointed out that the increased grant of two and a half lakhs now rendered it possible to devote adequate attention to exploration. The provision of this same grant in 1927-28 enabled excavations to be carried out at Mohenjodaro and Jhukar in Sind, Harappa and Taxila in the Punjab, Sarnath in the United Provinces, Nalanda in Bihar, Paharpur in Bengal, Nāgārjunikonda in the Madras Presidency and at Pagan and Hmawza in Burma. While it is unfortunately impossible to report such sensational finds as those recorded in 1926-27, the detailed accounts set forth in this Report[1] give ample evidence that the excavations have generally yielded results of great archæological interest.

Save for the researches of Major Mockler in Makran[2] over fifty years ago and my own in Sarawan and Jhalawan in 1925,[3] Central and Southern Baluchistan had remained, from the archæological point of view, an entirely unexplored region. That it remains so no longer is due to Sir Aurel Stein who, in continuation of his valuable researches in Wazīristān and Northern Balūchistan[4] toured extensively between November 1927 and April 1928 in the Sarawān, Jhalawān, Khārān and Makrān divisions of the Kalāt State. During that period he surveyed no less than sixty-five sites and at fifteen of these carried out trial excavations. These explorations, dealt with below, have resulted in the discovery of remains dating from early chalcolithic to historic times and reveal the former existence in these regions of a very widespread chalcolithic civilisation. In the case of the curious stone embankments so abundant in parts of these regions, and known locally as *gabrbands*, it is interesting to note that Sir Aurel Stein, confirms the opinion advanced in the Annual Report for 1925-26[5] that these are to be attributed, not to the Zoroastrian period as the name suggests, but to the chalcolithic age.

In the matter of conservation it is gratifying to be able to record an increasing realization by local bodies of their obligations in this direction and a recognition that the maintenance of ancient monuments is not entirely the concern of the Central Government. In this connection it may be noted that one-third of the total cost of the repairs to the tank and temples on the *ghat* at Viramgam[6] in the Bombay Presidency was borne by the local Municipality while to the total cost of Rs. 20,017 expended on the conservation of the remains at the fort at Rohtasgarh,[7] the Government of Bihar and Orissa generously contributed one-half.

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[1] *Vide* pp. 54-135 *infra*.

[2] Mockler, *On Ruins in Makran*. *J. R. A. S.*, 1877, N. S. Vol. 9, p. 121, *Proceedings A. S. B.*, Aug. 1876, p. 172; July 1877, p. 157.

[3] Hargreaves, *A. S. I.*, 1924-25, pp. 51-60; 1925-26, pp. 59-72. *Memoirs of the Archl. Survey of India, No. 35, Excavations in Baluchistan*, 1929.

[4] Stein, *A. S. I.*, 1926-27, pp. 219-224.

[5] *A. S. I.*, 1925-26, p. 72. [6] *Vide* p. 20 *infra*. [7] *Vide* p. 31 *infra*.

The question of the amendment of the Ancient Monuments Preservation Act has received the consideration of the Government of India and it is hoped that it may be possible shortly to undertake the necessary legislation to render it possible for non-official agencies to co-operate with Government in the exploration of the countless sites in India still awaiting excavation.

In conclusion I would record my obligations to Rai Bahadur Daya Ram Sahni and Mr. N. G. Majumdar for valuable assistance in the preparation of this Report.

H. HARGREAVES.

SECTION I.–CONSERVATION.

UNITED PROVINCES : MUHAMMADAN AND BRITISH MONUMENTS.

By Mr. B. L. Dhama.

OWING to the transfer, early in April 1928, of the permanent Superintendent, Khan Bahadur Maulvi Zafar Hasan, to the Frontier Circle, Lahore, the Annual Report for the Northern Circle has been contributed by the officiating Superintendent, in collaboration with the Assistant Superintendent.

A sum of Rs. 1,44,189 was expended during the year under report, *viz.*, on (*a*) Special Repairs, Rs. 43,229, (*b*) Annual Repairs, Rs. 48,998 and (*c*) Maintenance of Gardens, Rs. 51,962.

The income derived was Rs. 32,990-2-9 in the United Provinces and Rs. 16,914-2 in the Delhi Province.

For the convenience of supervision the Circle has been divided into four divisions, each under a Conservation Assistant. The pumping plant at SIKANDRA has been installed and the special repairs to ITIMADU-D-DAULAH'S TOMB at Agra have been practically completed, leaving money available next year for special repairs, and works that have been held in abeyance owing to want of funds. In the AGRA FORT several carved decayed stones, including four brackets of the DIWAN-I-KHAS, were renewed and in the courtyard of the AKBARI MAHAL 2,000 sq. ft. of new paving was laid. The other decayed brackets hidden away in the masonry need to be kept under observation. Three new iron-grated doors were also provided at suitable positions to keep out intruders during closed hours. At the TAJ MAHAL in addition to the ordinary patch repairs to walls and floors several decayed paving stones were replaced and where most necessary the inlaid work received attention. Several broken stone *jālis* round the river kiosks were renewed and cement tell-tales were fixed at suitable points round the drum of the main dome where cracks were in evidence. At FIROZ KHAN'S TOMB a teak wood door of Mughal design was provided. At RAMBAGH some broken stone *jālis* were renewed and a large portion of the boundary wall rebuilt. At the ROMAN CATHOLIC CEMETERY a missing stone cross over the tomb of John Hessings was replaced. Several of the most ruined graves were repaired and a carved facing stone of the tomb of SERAPHIMA RUSTIGO, which had fallen down and shattered, was replaced by a new one. At AKBAR'S TOMB at SIKANDRA a portion of the northern causeway was reset, part of the floor and steps restored and many decayed stones replaced. A pair of wire gauze doors with helical springs was provided to the entrance to the crypt to keep out bats and birds. A length of 76′ of the western wall being out of plumb was dismantled and rebuilt.

Broken lintels and missing *chhajja* slabs have been replaced and the floors improved by putting down lime concrete.

The BRITISH TOMB ENCLOSURE in the south-east was attended to, the loose railings were refixed with bolts and nuts and the standards and railings painted. At MARIAM'S TOMB four decayed brackets at the south were dismantled and replaced by new ones, necessitating the resetting of the *chhajja* slabs they supported. As the north-east corner was out-of-plumb, it was dismantled and reset, screened twin tie rods being inserted to take the thrust of the arch. Now that the yield of the tube-well at Sikandra is more than ample for the grounds at Akbar's tomb it is advisable to extend the pipe line to Mariam's tomb and to lay out the grounds within the enclosure. A lay out plan for these grounds is in existence. A length of 70′ of the fallen city wall at FATHPUR SIKRI was rebuilt and the pathways leading to the SAMOSA MAHAL and another in front of FAIZI'S SCHOOL were paved. The broken dusty floor of the RANG MAHAL was relaid with stone slabs over 3″ lime concrete and an iron turnstile was provided to prevent the ingress of cattle. Decayed brackets, shafts, and lintels of the third column from the east of BIRBAL'S STABLE were also replaced by new ones, as had been occasionally done also in previous years. Since, however, all the dangerously weak ones have now been changed it is not proposed to carry out any further replacement. About a mile of road was renewed with stone ballast which, in the locality, is cheaper than *kankar*, but as the steam road roller could not enter the courtyard of the Diwan-i-Am on account of the narrow gateway this portion of the road was renewed with *kankar*. A species of rank vegetation has been entirely eradicated by the simple process of removing it before the seeds had formed.

The Dâk Bungalow continues to be popular. The furniture belonging to the District Board has been returned and that belonging to the Public Works Department purchased at a cost of Rs. 1,772. The renovation of the furniture, crockery and cutlery is being considered and it is hoped that another year will see furniture and fittings worthy of the bungalow and the site. Rs. 3,589 were spent on the repairs to the old BAOLI WELL. The work done during the year was the clearing of debris, the refacing with carved and plain stones of the whole of the causeway and the replacement of decayed columns and other ornament in the *dalans*. The work is still in progress. A further portion of the fallen wall at JAGNER was rebuilt and extensive jungle clearance carried out. At the TOMB of RASHID KHAN at RASHIDABAD, Farrukabad District, several *chhajja* stones were replaced, vegetation from the domes rooted out and the crevices filled with lime concrete. At DAULAT'S TOMB at MEHNAGAR, Azamgarh District, 3″ concrete floor has been laid in the cenotaph chamber, the graves repaired and the jungle cleared. At AURANGZEB'S MOSQUE at BENARES another portion of the stone flagging in the courtyard was completed and a stone *jāli* was provided over the north door of the TOMB of LAL KHAN situated in the southern corner of the Raj Ghat plateau. The broken parapets of the STONE BRIDGE at BHITARI, Ghazipur District, were repaired, the jungle cleared and holes in the ramps filled in.

A palm tree against the entrance gateway of IFTIKHAR KHAN'S TOMB at CHUNAR, Mirzapur District, was removed as its swaying tended to damage the *chhajja* stones, and trees growing against the compound wall were removed before their roots and branches had time to do damage. Last year a sum of Rs. 11,663 was spent on the acquisition of shops over the GOMTI BRIDGE at JAUNPUR and this year the transaction was completed by the further expenditure of Rs. 10,912. The kiosks on the bridge will shortly be vacated and the tenants of the shops will no longer display thereon their unsightly sunshades and hangings. Before long extensive repairs will have to be undertaken to several of the kiosks. Here, as elsewhere, iron dowels are primarily to blame. Efforts were made to get the Mutawallis of the SHARQI MOSQUES to sign agreements, but these have unfortunately been unsuccessful and in consequence no repairs were carried out at the monuments. The modern additions to AURANGZEB'S PAVILION at KHAJUHA, Fatehpur District, such as the tiled verandah, fire place, kitchen and bathrooms were dismantled. The materials were auctioned and the proceeds handed over to the Chairman, District Board, Fatehpur, after deducting the cost of dismantling. All the roofs of the JAMI MASJID at SAMBHAL, Moradabad District, and the entrance gateway were relaid with lime concrete, the masonry steps towards the north were repaired and the wooden roof beams and planks of the rooms to the north of the prayer chamber were also renewed. At the RESIDENCY at LUCKNOW owing to the entrance of storm water through an unroofed passage, the *tahkhanas* under the model room were in an insanitary condition. This has been rectified by the provision of a corrugated sheet iron roof concealed behind a parapet wall of the passage. The flag staff, the only one in the Empire that has its flag flying after sunset, was painted and a few gun carriages were repaired. The iron railing round the Celtic Cross was removed at the request of His Excellency the Governor. A gang of *bankatis* was employed throughout the year to visit all the buildings in Lucknow to clear away the weeds and vegetation. A small electric pump, capable of lifting 75 gallons a minute, was erected at one of the wells and the problem of scarcity of water has thus been solved. Two shattered brackets of the SOLA KHAMBA at the NADAN MAHAL and IBRAHIM CHISHTI'S TOMB were replaced and the compound wall was raised two feet to prevent the neighbouring inhabitants from scaling it. Several rotten rafters were replaced by sound ones at SIKANDAR BAGH. Ordinary petty repairs were also carried out to the DILKUSHA PALACE. At BIBIAPUR HOUSE a small strip of land round the house has been transferred to this Department by the Military authorities, boundary pillars have been erected and a chaukidar employed to keep the buildings neat and tidy.

Seventy-five Notice Boards were purchased, a few have already been erected at various monuments and the rest will be fixed next year.

The ARCHÆOLOGICAL GARDENS in the United Provinces were admirably maintained. The success is largely due to the efforts of Mr. A. E. P. Griessen, Deputy Director of Gardens, United Provinces, who is now unfortunately on the eve of retirement. He has been connected with the Archæological Gardens

since 1900 and their beauty and appropriateness are a testimony to his unfailing interest and care during these twenty-nine years. At the TAJ GARDENS, at AGRA, the maintenance has always been the object of special attention as they rank first amongst the historical gardens in the Provinces. Its lawns, floral display, vegetation and the beautiful vistas have been the particular care of Mr. Morgan, the Officer-in-Charge. At KHAN-I-ALAM the restoration of its garden structure is the main achievement of the year. A more liberal propagation of ornamental shrubs, etc., has been arranged for to meet the needs of the archæological gardens and local demands. The extension of the water distribution service to the southern forecourt of the PEARL MOSQUE has enabled this part of the grounds to be properly maintained. The annual programme providing for the relaying of one acre of turf has been adhered to. At the garden of ITIMADU-D-DAULAH'S TOMB all structural restoration work being completed, an attempt has been made to reclaim its shrubberies which greatly suffered during the operations entailed by conservation. The grounds of the inner enclosure are to be entirely relaid on the lines laid down by the Director General of Archæology in India, and the work undertaken next year when funds are provided. At CHINI-KA-RAUZA hedges and shrubberies have been carefully attended to and the rank vegetation that encroached on its boundaries eradicated. Owing to inadequate water supply as a result of the failure of the pumping engine the year's programme could not be carried out. The engine has, however, been repaired and the garden is now in a satisfactory condition. At the ROMAN CATHOLIC CEMETERY the pathways are being properly demarcated and lined with Mughal bricks, the central walk straightened and suitably bordered with *ophiopogon* where grass could not be properly grown. The shrubberies at SIKANDRA have been extended on both sides of the eastern and western causeways, stray building materials collected and stacked and used as a soling coat for the roadways, unsightly earthen mounds levelled off, and the recently planted trees properly spaced. The forecourt lay out has been completed, an evergreen hedge to screen off the wire enclosure planted and a temporary water supply provided till the permanent installation is made available. Climbers have been planted to cover the old walls on the east and west of the gateway.

The lay out at the KHUSRU BAGH at ALLAHABAD finally sanctioned early in the year, has been successfully carried out, and provides a suitable setting for the monuments. By the removal of the central drives imposed by the scheme, the historical grounds are now quite distinct and separated from the general lay out of the gardens. But certain adjustments were found necessary to make this isolation of the historical grounds merge aesthetically into the general lay out so as not to create too violent a contrast. These alterations are now being gradually effected. There remain, however, the extension of the water distribution service to command the entire site, the development of the northern glade and a final top dressing of all pathways etc. These will receive due attention when funds are available. The RESIDENCY GROUNDS at LUCKNOW have been the object of special attention during the year under

review. Besides the returfing of the main lawn, the CROSS MONUMENT parterre has been laid out as a most attractive rose garden, forming a splendid and appropriate setting for the monument. The CEMETERY ENCLOSURE has been freed from coarse grasses and rank vegetation so as to encourage the spread of *dub* grass. An electric pumping plant capable of giving a safe hourly yield of 4,500 gallons has been installed in connection with the old well, which has hitherto been quite inadequate for the extent of ground served by it. The yield of the tube being given by the Agricultural Engineer to the Government of the United Provinces as 6,000 gallons per hour, there should be no anxiety as to the supply which, however, will be put to a practical test during the coming summer months. The little grounds at NADAN MAHAL and IBRAHIM CHISHTI'S TOMB have also received due attention. The obtrusive bricks that aligned the pathways have been relaid flush with their sides. The ground along the newly restored boundary wall has been planted and the hedges properly re-aligned and maintained. At the DILKUSHA PALACE GROUNDS improvements during the year comprise the proper re-alignment of all pathways and their demarcation with Mughal bricks laid flush with their sides. Dwarf hedges have been planted to screen elevated masonry water courses, and palms planted to emphasise the outlines of the old enclosure. The earthen mounds flanking the palace steps are now planted with bougainvillea and roses will eventually replace the cannas which are constantly exposed to the ravages of porcupines.

DELHI : MUHAMMADAN AND BRITISH MONUMENTS.

In the Delhi Province the total expenditure incurred on the conservation and maintenance of the monuments amounted to Rs. 23,287 and Rs. 68,596, respectively. Nine works of special repair were undertaken while the majority of the buildings needing attention received annual repairs. One of the most important works undertaken during the year was the clearing of the houses inside and outside of the BEGAMPURI MOSQUE, which had been acquired during the previous year. Unfortunately some of the tenants have rebuilt their houses very near the mosque and the Deputy Commissioner has been requested to instruct others not to rebuild within a distance of fifty feet of the enclosure. Jungle was removed from the walls of UGAR SEN KI BAOLI and the roof, broken piers and arches were rebuilt and underpinning was done throughout the building and the passages on either side of the Baoli repaired. Earth and debris were removed from the courtyard of the attached mosque and the original floor exposed (Pl. I, *a* and *b*). Earth and debris were cleared from the courtyard and the prayer chamber of the KALI MASJID, NIZAMUDDIN, walls were underpinned and the modern fillings removed from doors and windows (Pls. I, *c* and *d*; II, *a* and *b*). The jambs of arched openings of the TOMBS BETWEEN THE QUTB ROAD AND HAUZ KHAS were made good, cracks in the domes were filled with cement masonry and the floors of the tombs repaired. Stone lintels were also

provided to arched openings where necessary. At SIKANDAR SHAH LODI'S TOMB (Pl. II, *c-d*) and LODI BRIDGE the broken walls and arches of bastions were rebuilt, underpinning was done to the enclosure walls and an approach path was made from Sikandar Shah Lodi's tomb to the Lodi Bridge. For the *mālis* working at the FIROZ SHAH KOTLA six quarters were constructed outside the garden, each room being 10′×9′ with a 7′ wide verandah in front. Jungle and vegetation were removed from the walls of ZANAN KHANA which were also underpinned and their open joints filled with fine concrete, while in many places old plaster was also edged off. In the HAYAT BAKHSH GARDENS at DELHI FORT two wells which had been covered with conspicuous and unsightly domes by the Military Authorities were dismantled and rebuilt. Eight *mālis'* quarters were constructed in the *dalans* to the north of the entrance to the QUTB, each quarter measuring $9\frac{5}{8}'\times 9'$ and provided with a small courtyard. Other buildings that received attention during the year in the way of petty repairs are DELHI FORT buildings, BARADARI in the ROSHANARA GARDEN, TRIPOLIA GATEWAY, MUTINY MEMORIAL, CHAUBURJI MASJID, KOTLA FIROZ SHAH, PURANA QILA, KHAIRU-L-MANAZIL, SHER SHAH'S GATEWAY, SABZ BURJ, ARAB SARAI, ISA KHAN'S TOMB, HUMAYUN'S TOMB, the BARBER'S TOMB, NILA GUMBAD, KHAN KHANAN'S TOMB, SAFDARJANG, MOTH-KI-MASJID, CHAR MINAR, BIJAI MANDAL, HAUZ KHAS, QUTB and ADAM KHAN'S TOMB. The work executed included removing debris, underpinning walls, edging off plaster, replacing broken stones, lime pointing, relaying roofs with lime concrete, resetting displaced stones, relaying floors, and removing infillings from arch openings and windows, rebuilding fallen portions of enclosure walls and repairs to steps. The old Booking Office outside the DELHI FORT was in a dilapidated condition and much too small. A new one on a larger scale was constructed at a cost of Rs. 910.

During the year fifty Notice Boards were supplied to the Public Works Department for erection at the various monuments in the Delhi Province. Of these 25 were purchased during the year 1926-27, the other 25 during the year under report.

At DELHI the maintenance of the gardens continued to be satisfactory. At KOTLA FIROZ SHAH the appearance of the garden has been considerably improved consequent on the eviction of the *Malis* which became possible on the erection of the *mālis'* new quarters outside. The difficulty of watering the lawns at the PURANA QILA still continues partly owing to the shortage of water, but largely on account of the undulating nature of the ground. As a result of the better facilities in regard to watering at HUMAYUN'S TOMB, the grounds have, of late, much improved in appearance. At SAFDARJANG the lawns recently planted on the north side greatly add to the appearance of the garden but the southern and western approaches are still in need of improvement. It is hoped to undertake this work soon. At HAUZ KHAS the gardens were maintained in fair condition. The gardens at the QUTB were kept in good condition despite the difficulty of obtaining an adequate supply of water during the summer months.

PUNJAB : HINDU AND BUDDHIST MONUMENTS.

By Mr. M. S. Vats.

During the year 1927-28 a sum of Rs. 43,076 inclusive of agency charges was sanctioned by the Government of India for the conservation and maintenance of Hindu and Buddhist—Central Protected—monuments in the Punjab. This was supplemented by a further grant of Rs. 1,326. Out of the total grant, Rs. 29,297 were placed at the disposal of the Secretary to Government, Punjab, Public Works Department, Buildings and Roads and Hydro-Electric Branches, for completion of the Archæological Museum (Rs. 22,420) and raising of pump level and platform for water supply at TAXILA (Rs. 1,161), conservation of ancient monuments in the Kulu Sub-Division (Rs. 2,727), providing wooden shelves in two antiquity rooms at HARAPPA (Rs. 153), and for annual repairs (Rs. 2,836). For the maintenance of Police Guard at Taxila, Rs. 1,617 were allotted to the Home Department but subsequently withdrawn and added to the Archæological reserve as the Government of India debited this charge to the head "26—Police—Central." Rs. 12,788 were placed at the disposal of the Director General of Archæology in India for annual repairs at Taxila, Rs. 550 contributed towards the cost of removal and rebuilding of a kitchen in the NURPUR FORT, District Kangra, and Rs. 150 utilized by the Archæological Superintendent for purchasing notice boards and as registration fee for agreements. The Public Works Department having surrendered Rs. 4,477, the modified grant stood at Rs. 38,308.

The only special repair works in the Punjab were the conservation of temples at BAJAURA, NAGGAR, DASAL and JAGATSUKH in the KULU sub-division of the Kangra District. But as the work could not be completed last year, it will be dealt with in the next report.

UNITED PROVINCES : HINDU AND BUDDHIST MONUMENTS.

A sum of Rs. 24,813 was granted for the conservation of Hindu and Buddhist monuments in the United Provinces. Rs 21,606 were allotted to the Superintendent, Archæological Survey, Muhammadan and British Monuments, Northern Circle, Agra. A sum of Rs. 6,807 was expended on special repairs to the approach road and certain monuments in the KALANJAR FORT, District Banda; Rs. 3,444 for GUPTA and VARĀHA TEMPLES at DEOGARH, District Jhansi; Rs. 2,337 for antiquities at DWARAHAT, District Almora; Rs. 965 for GWALBABA and ŚIVA TEMPLES in the JAGNER FORT, District Agra; Rs. 115 for BARA KHAMBA at KONCH, District Jalaun; Rs. 3,500 for the construction of a local museum at DEOGARH; Rs. 151 for converting the existing room outside the NARASIMHA TEMPLE in the Talbehat Fort into the *Bhogaśālā;* Rs. 1,000 for purchase and erection of notice boards; and Rs. 3,287 for annual repairs. The balance of Rs. 3,297 was assigned to the Superintendent, Archæological Survey, Hindu and Buddhist Monuments, Northern Circle, Lahore, for the conservation of Buddhist remains (Rs. 1,680) and annual repairs to the Archæological Museum and attached buildings at SARNATH (Rs. 1,327) and registration charges

Rs. 200). The former reported a saving of Rs. 3,005 which was added to the Archæological reserve. A brief summary of the conservation works carried out in the United Provinces is given below.

Special repairs were undertaken to the approach road and certain monuments in the KALANJAR FORT, District Banda, in accordance with a conservation note of 1927. The fort is situated in the south-west corner of the Girvan *tehsil*, on the old high road to Nagode, at a distance of 35 miles from Banda and 23 miles from Atarra, railway stations on the Jhansi Manikpur Section of the Great Indian Peninsula Railway. Up to Naraini, the headquarters of the *tahsil*, there is a motor service from both places, but the remaining 13 miles have to be travelled by a raised *kacha* road, except at the Bagain stream, where a stone causeway is provided. The hill of Kalanjar rises to about 700 feet above the surrounding country and though accessible in the lower portion, the upper part is almost everywhere impossible of ascent, consisting, as it does, of sandstone in horizontal strata, presenting externally an almost perpendicular face 150′ to 180′ high. It was, therefore, one of the strongest forts from very early times.

Sir Alexander Cunningham states that the fort "may have been founded at least as early as the beginning of the Christian era."[1] As a fortress, its first historical mention is in A.D. 1023, when it was invaded by Mahmud of Ghazni during the reign of the Chandella Raja Gaṇḍa Deva. Again it was surrendered by Paramarddi to Kutb-ud-din Aibak in 1202, to Sher Shah in his hour of death in 1545 and, after passing through the hands of Bundelas, to the British Government in 1812. "Between the years 1550 and 1600 *samvat* there seem to have been extensive works carried out at Kalanjar. Manu Vijaya seems to have been the principal architect and sculptor; probably at that date the fort was thoroughly repaired as well as enriched with sculpture[2]". During the reign of Aurangzeb, the first gate was added and the fortifications thoroughly repaired[3]. There are a number of dedicatory and other inscriptions on the gateways and other buildings in the fort, the earliest of which is a Gupta record in 15 lines. The expression *Kālañjarādri* occurs in four inscriptions of the 12th century noticed by Cunningham. Pilgrims' records range from *Samvat* 1377 to 1700. Among the earliest monuments in the fort, are those of the 12th century which are to be ascribed to the Chandella Rājās Madanavarman and Paramarddi Deva.

Access to the fort is gained by a pathway ascending the hill from the south east and further through seven gateways connected with each other by flights of stone steps which continue throughout the ascent except where the approach road is level. Owing to landslips, the road required urgent attention especially between the third and fourth and fourth and fifth gateways. Between the former, three dangerous breaches had been effected in the rampart walls which with considerable portions of the road had been washed down by the large

[1] *A. S. R.*, Vol. XXI, p. 23.

[2] *Banda District Gazetteer*, p. 242.

[3] *Ibid*, p. 247 and Cunningham, *A. S. R.*, Vol. XXI, p. 28.

volume of water rushing down the slopes, while between the latter there was one slip. These breaches have now been made good by providing retaining walls with parapets in which a number of weep holes have been left for the easy escape of water (Pl. III, *a*). Numerous boulders which had rolled down the hill slopes were removed from the approach and broken steps repaired. Protruding blocks were knocked off by sledge hammering. The west jamb of the sixth gateway, which was out of plumb, was dismantled and rebuilt and the fallen dry stone retaining wall to the west of this gateway also reconstructed.

For the rest attention was mainly devoted to the temple of NĪLAKAṆṬHA which lies to north-east between the inner and outer ramparts and is the principal monument in the fort. According to the large inscribed slab, still lying in the cella, the temple was built by Paramarddi and the epigraph inscribed by Padma on Monday the 28th October, 1201 A.D. The temple faces west and is sacred to the *Nīlakaṇṭha liṅga* which is 4′ 6″ high and made of dark blue stone set with silver eyes. The shrine itself is an octagonal cave with flat roof having a magnificent *maṇḍapa* in front, supported on each side by four pillars, the corner spaces being cut to form an octagon. Originally it appears to have had three porticos supported on two projecting pillars in the centre of each of its three sides, but only traces of the southern portico are now left. The pillars made up in sections are crowned by cross-shaped bracket capitals. The corner pillars are square throughout, but the remaining eight are square, octagonal, sixteen-sided and circular from the base to the upper part of the shaft. The temple is typical of the 12th century architecture of the Chandellas.

The roof of the cella, which was leaking, has been made water-tight, uneven stones of the *maṇḍapa* pavement re-set and modern additions dismantled. A *sal*-wood doorway of simple Hindu design has been provided to the shrine in place of the former rude planks. The compound has been cleared of débris and jungle, and stray sculptures brought together and housed in the modern *dalan* which stands immediately north of the *maṇḍapa*. Several rock-cut sculptures have been freed of moss. The most important repair for the safety of the pilgrims who visit these shrines, was the rebuilding of a part of the steep retaining wall which flanked the steps leading down to the temple and in which a dangerous breach formerly existed.

The L-shaped police *chowki* standing inside the seventh gateway has been cleared of debris, but thorough repairs to this can be undertaken only when all other works at Kalanjar have been completed. Notice boards have been provided at the first and seventh gateways, the gateway to the NĪLAKAṆṬHA TEMPLE, MṚIGADHARA, SITA SEJ, a small cave, and KOT TIRTHA or the large holy tank. All these works were completed at a cost of Rs. 5,857.

As stated in the last year's report a sum of Rs. 18,447 which had already been contributed by Messrs. U Po Kyu, K.S.M., A.T.M., retired Additional District Magistrate, Henzada, and U Po Hlaing, T.P.S., Honorary Magistrate Kyangin, Henzada, was utilised for the restoration of the NIRVĀṆA STŪPA and MATHA KUAR CHAPEL at KASIA. Both monuments were unearthed by Mr.

Carlylle in 1876 and examined by Mr. Hirananda Sastri in 1907-08. Writing about the Nirvāṇa Stūpa Mr. Sastri says "At the time the domed top of it had already gone, while the extant portion of the drum which measured 25′ in height and 56′ in circumference, was in a more or less dilapidated condition." The result of his examination of the Stūpa and the chapel of the Kalachuri monastery known as Matha Kuar has been described by him in the Archæological Survey Report for 1910-11[1]. Detailed plans and elevations of both monuments having been sanctioned by the Director General of Archæology in India, their restoration was completed this year (Pl. III, *b*). In the NIRVĀṆA STŪPA, a relic chamber has been constructed in the centre, 20′ above the ground level. The chamber is a replica of the original *Stūpa* and $\frac{1}{13}$th of its size. It was closed in the presence of sixteen Buddhist priests headed by Rev. U. Chandramani between 6 and 10-30 A.M. on the morning of the full moon day of Tabaung 1288, Burmese era corresponding to 2470 of the Buddhist year of religion and 18th March, 1927, A.D. Numerous objects of gold, silver and copper were deposited in the relic chamber together with the following copper plate inscription :—

"THESE GOLD AND SILVER FIGURES OF GAUTAMA BUDDHA AND THE COPPER PLATES INSCRIBED WITH THE BUDDHIST TEXTS ARE THE GIFT OF MR. U PO KYU OF HENZADA, BURMA, AND HIS WIFE MA KIN SU AND HAVE BEEN DEPOSITED AT THEIR REQUEST. THIS STŪPA WHICH IS SITUATED NEAR THE VILLAGE KASIA (PĀLI, KUŚINĀRA) MARKS THE SPOT WHERE THE BUDDHA ATTAINED PARINIRVĀṆA ABOUT THE YEAR 483 B.C. IN THE PROGRESS OF TIME THE BUDDHIST ESTABLISHMENT AT KUŚINĀRA BECAME DISUSED AND WAS FORGOTTEN UNTIL THE ARCHÆOLOGICAL SURVEY OF INDIA UNDERTOOK SYSTEMATIC EXPLORATION OF IT AND BROUGHT BACK TO LIGHT SEVERAL MONASTERIES, TEMPLES, ETC., OF DIFFERENT DATES. THE INSCRIPTIONS WHICH HAVE HELPED TO PROVE THE IDENTITY OF THESE REMAINS WITH THE PARINIRVĀṆA CHAITYA INCLUDE A COPPER PLATE EPIGRAPH CONTAINING, BESIDES CERTAIN BUDDHIST SŪTRAS, THE WORDS "PARINIRVĀṆA CHAITYE TĀMRA PAṬṬA ITI." THE COPPER PLATE WAS FOUND IN THIS VERY STŪPA AND WAS ACCOMPANIED WITH A SILVER COIN OF THE GUPTA KING KUMĀRAGUPTA (A.D. 413-455) WHO MUST, THEREFORE, HAVE ERECTED IT[2]. THE ORIGINAL STŪPA IN WHICH A PORTION OF THE CORPOREAL REMAINS OF THE MASTER WAS DEPOSITED IMMEDIATELY AFTER HIS DEMISE PRESUMABLY LIES BURIED UNDER THIS VERY STRUCTURE. THE COST OF RESTORING THE MONUMENT HAS BEEN MET BY THE DONOR NAMED ABOVE."

Separate inscribed stone tablets setting out names of donors and the objects of donation have been built into the Parinirvāṇa Stūpa and the Matha Kuar chapel at the time of restoration. Except for minor works still needing attention the conservation of the monastic area is now almost completed.

[1] *A. S. I.*, 1910-11, pp. 64-66 and 68-69.

[2] The numismatic evidence does not prove that the Stūpa was built by Kumāragupta I. It only indicates that the copper-plate is probably not much later in date than c. 455 A.D. when Kumāragupta is supposed to have died. *Cf.* Pargiter, *A.S.I.*, 1910-11, p. 75.—Ed.

In accordance with the recommendations of Dr. J. Ph. Vogel and Rai Bahadur Daya Ram Sahni several measures of conservation were undertaken to the GUPTA and VARĀHA TEMPLES at DEOGARH, and a much needed godown constructed to house the antiquities found by Rai Bahadur Daya Ram Sahni. The godown consists of a single room 24′ × 16′ with a small vestibule in front and has inside arrangements like those of the Sanchi Museum (Pl. III, *d*) and was completed at a cost of Rs. 2,648.

The most important measures connected with the famous Gupta temple were to relieve the roof of all encumbrance, to clear the plinth, carefully stacking sculptured panels and architectural fragments close to their find-spot, to remove jungle from the compound and to excavate it to its original level. The débris on the roof consisted merely of earth and four stone blocks of the hearting, which have been taken down. The roof has been drained and made watertight. In doing so, clear indications of a ledge on the inner faces of the north and south walls were discovered at a height of 10′ 4″ above the roof, showing that originally there was an intermediate roof between the ceiling and the top of the *śikhara*. It was further discovered that two top courses of the hearting on the south and four on the north, which appear considerably tilted from below, are not really unsafe. They are exactly in the same condition as they were in 1917. The east or back wall above the roof level appears considerably out of plumb but the hearting is sound and it is hoped that grouting of fissures will be sufficient, since its condition is exactly the same as it was in 1917. On this side a lintel was found projecting about 4′ from the surface of the wall and further examination revealed that this was one of a series of lintels over which a deep horizontal *chhajja* of flat stones was carried all round, shading the doorway and the very excellent sculptured panels on the other three sides. Broken portions of these lintels and covering slabs can be seen on all sides immediately above the frieze of window pattern. Two trees, growing in the upper portion of the temple have been cut down. The plinth has been cleared 20′ all round, but restoration of the *śikhara* is impossible as altogether not more than twenty-four architectural stones have so far been recovered.

About 40′ north of this temple the plinth of a smaller shrine which is 27′ square has been discovered. It has two moon stones on the south and west; the former connecting it with the Gupta temple and the latter, like that of the larger temple, probably marking the entrance. On these two sides only the corners are recessed. The bold mouldings of its plinth, which at best survive in three courses only, point to a date not far removed from the Gupta period. To the south also, there are traces of another structure which will be revealed when the whole compound is fully cleared. Four carved Gupta pillars which stood in the compound were examined. They appear to have been erected at the corners of the stone wall, originally built by the Public Works Department. None of them faced any cardinal direction or had a pedestal to rest on. They have now been shifted and placed outside the small godown referred to above. Among sculptures placed in the godown, particularly remarkable are the panels relating to the Rāmāyaṇa. Sculptured representations of the

Rāma legend are exceedingly rare, those at Deogarh being among the best examples.

Steps leading to the VARĀHA TEMPLE have been rebuilt and coursed rubble masonry of plinth No. 2 restored to a uniform height of 5 feet (Pl. III, *c*). The three principal panels corresponding to similar panels in the niches of the Gupta temple recovered in 1918-19 by Rai Bahadur Daya Ram Sahni have been placed in the centre of the north, west and south walls and the few broken sculptures and architectural fragments stacked in the shrine. These works have been completed at a cost of Rs. 2,495.

At SARNATH the mediæval MONASTERY No. VI, which in its present condition was scarcely recognizable as such, has been conserved to show its general outline on all sides. It appears to have been restored twice, and, as very little is left of its latest rebuilding, repairs have been confined to the middle structure or the first restoration. As far as available, old bricks have been used in the facing, while the core has been filled with specially manufactured bricks of the same size. Except three top courses, which have been laid in lime, repairs have been carried out in mud mortar. The entire eastern and western rows of cells which were buried under debris had to be excavated and rebuilt to a considerable height (Pl. IV, *a*). While digging the foundations of a chamber at the south east corner, a copper statuette in the round, of a female divinity standing on a lotus pedestal was recovered (Pl. XXXV, *i*). Unfortunately both of its forearms and halo are broken. It was found at a depth of 6 feet and may therefore be contemporary with the original construction of this monastery. Owing to an increase of the annual repair grant, it was possible to undertake minor repairs to all the principal monuments and to underpin several small *stūpas*. A much needed improvement was the substitution of existing notice boards by enamelled ones fixed on to proper T iron standards. This will save recurring expenditure on repainting letters. The lawns attached to the Sarnath Museum have been returfed adding considerably to the appearance of the gardens (Pl. IV, *b*).

The ŚIVA TEMPLE in the JAGNER FORT in Agra District stands on the east in a bastion between the Diwan-i-Am and Zenana Palace. It consists of a plain square chamber with a ceiling of flat slabs over a circular cornice and covered on the outside by a dome, of which only the core is left. The back wall of the bastion or the circumambulatory passage of the shrine has been built up in chisel-dressed stone masonry to a height of 6 feet and the broken lintel on the south of the verandah made watertight. Whitewashing has been done at the GWALBABA TEMPLE and some missing stones of the breast walls of the flight of steps leading to it supplied. The roofs of the landing pavilions have also been made watertight with lime concrete.

The TEMPLES at DWARAHAT in the Almora District have already been conserved, but to prevent entry of cattle barbed wire fencing has been provided to the GUJJAR DEO and BAN DEO TEMPLES and to the MANIYAN, RATAN DEO and MṚITYUÑJAYA groups. A dry stone retaining wall on the north of the Mṛityuñjaya group and a covered drain taking off ablution water from the

main shrine have also been constructed, and the stone pavement, at the Gujjar Deo temple, levelled and pointed. After erecting notice boards and raising the height of the boundary walls of the Kacheri group the measures initiated in 1924-25 will have been completed. Among minor works of special repair are the conversion of an existing room outside the NARASIṀHA TEMPLE in the TALBEHAT FORT into a *bhogaśālā*, jungle clearance and the grouting and fixing of a notice board at the BARAKHAMBA at KONCH in the Jalaun District.

Notice boards of standard design were fixed at twenty-five Hindu and Buddhist monuments in the United Provinces.

Notable items of annual repair are 19,000 cubic feet of earth work, 1,443 cubic feet of brick-work, clearance of site, and removal of jungle and debris from MONUMENTS at SAHETH MAHETH; 350 square feet of stone flooring at RĀDHĀ BALLABH; some carved stone work at GOBIND DEO TEMPLES at BRINDABAN; and the removal of vegetation and large trees from the temples at CHANDPUR and DUDHAI.

PUNJAB: MUHAMMADAN AND BRITISH MONUMENTS.

By Khan Bahadur Maulvi Zafar Hasan.

A sum of Rs. 68,367 was spent on conservation and maintenance of the Muhammadan and British monuments in the Punjab, and out of that Rs. 55,775 were expended by the Public Works Department, Rs. 1,373 by the Deputy Commissioner, Lahore, and the balance of Rs. 11,219 departmentally. Besides the annual repairs, nine works of special repairs were undertaken during the year, the most important being those carried out at the LAHORE FORT in connection with its proposed lay-out and maintenance on the lines of the Delhi and Agra Forts. The overhead reservoir mentioned as under construction in the last year's report has been completed, and connected with the tube-well and the pumping plant, installed in the outer defences at the north-east corner of the Fort. It has a capacity of 20,000 gallons, but the yield of the tube-well is calculated at 7,000 gallons per hour, which will suffice to meet the requirements for the fountains and the irrigation of the lawns and shrubberies. The unsightly water tower which stood in the central tank in Jahangir's quadrangle has been dismantled, and the distribution system in the old garden area rearranged. The new pipe lines are now laid along the causeways to give the former a firm footing and allow their examination without disturbing the lawns. Beyond Jahangir's quadrangle the old pipe line, the legacy of the distribution system of the Military Department, has been retained and connected with the main, until the lay-out scheme of the Fort is finally settled.

Repairs have also been effected to the tank in Jahangir's Quadrangle, the floor and side walls of which have been replastered. The central feature of the tank is a raised *chabutra* originally approached by small low causeways on the east and west respectively. The eastern causeway, the remains of which were discovered, is being rebuilt, while the western bridge having entirely disappeared is marked only by projections from the *chabutra* and from the

opposite western bank of the tank. These projections have been preserved to indicate the former existence of a corresponding causeway on the west. The fountains discovered in the tank together with that in the centre of the marble tank in front of the BARI KHWĀBGĀH have been connected with the new pipe lines, and under a heavy pressure from the reservoir, which is placed 25 feet above the ground level, they now work perhaps with greater force than in former days. The heads of all these fountains have disappeared, and it is proposed to replace them with new ones of marble. The work, which is being executed by the Sanitary Division of the Public Works Department, is in progress and will be completed in the ensuing year.

The chief works, executed departmentally at the Lahore Fort, were the reconstruction of the dilapidated bastions at the north-east corner and immediately to the south of the outer gate of the HATIPOL, the repairs to the north wall at its eastern end and to the retaining wall to the north of the approach road from the HATIPOL GATE to the cross bridge and the clearance of earth and débris from the HAZURI BAGH GATE and the so-called moat.

Mention may also be made of the demolition of the modern structures carried out in the Fort during the year under review. These structures included the building No. 33 in the courtyard to the east of the SHISH MAHAL, the building No. 31 in the ruined quadrangle of the KHILWAT KHANA, a kitchen at the north west corner of JAHANGIR'S QUADRANGLE, the building No. 28 immediately to the east of the BARI KHWĀBGĀH, the building No. 23 to the south east and the barracks No. 2 and No. 3 in front of the DIWAN-I-AM. Except the kitchen, which was dismantled departmentally, all of them were sold as they stood, the purchasers being made responsible for their demolition and clearance of their sites. This procedure was adopted for want of supervising staff and to avoid trouble in the disposal of the material obtained from these buildings, but although it expedited the dismantling work, difficulty has been experienced in enforcing the condition of the clearance of sites within the specified time upon the purchasers. Consequently the sites of most of the buildings are still strewn with earth and dèbris, but steps are being taken to get them cleared as soon as possible. The demolition of each of the buildings Nos. 28 and 31 has disclosed a fine marble pavilion of the Mughal period (Pl. IV, *c* and Pl. V, *b*), while a SIKH BARADARI has been revealed by the removal of the building No. 33 (Pl. V, *a*).

As stated in the last year's report one of the conditions, under which the Lahore Fort has been transferred to the Archæological Department, was that a part of its southern wall should be demolished and replaced by a series of terraces and flights of steps in order to demilitarize the Fort. The work has been undertaken by the Local Public Works Department, the cost being met from provincial funds. A portion of the south wall has accordingly been demolished, and the terraces and flights of steps connecting them are under construction, being built of country bricks in keeping with the adjoining masonry of the Fort. These terraces are proposed to be maintained as public gardens, and in order to prevent free access of visitors into the archæological area iron grated

doors are to be provided at the upper ends of the flights of steps. It is believed that these doors will be placed under the control of the Archæological Department, otherwise a fencing must be erected to separate the terraces from the archæological area.

Other monuments at and about Lahore received the usual attention, and necessary annual repairs were carried out to them. The very dilapidated walls of the AKBARI SARAI at SHAHDARA have been treated with extensive underpinning and pointing, while the cross removed from the dome of ANARKALI'S TOMB at LAHORE has been re-erected in the compound of the Lahore Cathedral.

At MAHAM in the Rohtak District special repairs were effected to SHAH JAHAN'S BAOLI, which, according to an inscription it bears was erected by one Saidu in the year 1067 A.H. (1657 A.D.) No information is forthcoming about the builder of this fine *baoli*. Local tradition, however, avers that he was a mace-bearer of the Emperor Shah Jahan. The *baoli* is a magnificent structure of brick and block *kankar*. It consists of three stages marked by landings. At the end of the flight of steps lies the well proper, which is circular and forms the south end of the structure. Subsidiary staircases in the thickness of walls give access to the landings, while a raised *chabutra* with a tank on either of its east and west side marks the well on the ground level. The inscription, noted above, is engraved on a marble tablet affixed to the northern wall of the shaft. The building is in a sound condition, and the repairs carried out to it were the reconstruction of the broken portions of the *chabutra* well and the steps leading to ft, the underpinning of the walls and the clearance of silt and débris from the shaft, steps and staircases.

The conservation of the BAB-I-FAIZ GATE at PANIPAT in the District of Karnal was another work of special repairs executed during the year under review. The gate stands solitary to the north of the town with a metalled road passing through it. An inscribed marble tablet over its northern arch indicates its name as Bab-i-Faiz (door of beneficence), and also bears the name of one Nawab Sadiq and the date 1149 A.H. (1737 A.D.). The inscription is rather vague, but seems to refer to the erection of the gate, called the Bab-i-Faiz by Nawab Sadiq in the year 1149 A.H. The gate constructed of brick masonry possesses no very particular architectural interest, and the repairs executed consisted mainly of the underpinning of its walls and treating open joints in brick work with sunk pointing.

The work of special repairs to the monuments in the Jullundur District continued from the last year has been completed. These monuments included the ancient MUGHAL SARAIS at DAKHNI and NUR MAHAL, and seven KOS MINARS marking the old *Badshahi* road from Delhi to Lahore. A detailed description of the *sarais* and the repairs executed to them have already been mentioned in last year's report, the work carried out during the year under notice being the conservation of the Kos Minars.

The planting of shrubberies in the lowest terrace of the SHALAMAR GARDEN, LAHORE, mentioned in last year's report has been completed. The area planted was 3,200 square yards necessitating the planting of no less than 2,500 shrubs.

The work was executed at a cost of Rs. 1,373 against an estimate of Rs. 2,325, the saving being due to the employment of the permanent garden establishment on this work for a longer period than had been anticipated.

The unsatisfactory arrangement adopted to water the grass plots in this terrace deserves special attention. The level of these parterres has risen higher than the drains supplying them with water, and hence it is not possible to irrigate them without flooding the causeways. The practice is detrimental to the causeways, causing the ornamental brick pavement to decay and to subside in many places. The remedy lies in lowering the level of the grass plots at least nine inches to enable the original water courses under the causeways to perform their function. It is expected that the local authorities, who are responsible for the maintenance of the garden, will adopt early measures to undertake the work and save the causeways from further dilapidation.

The scheme of lay-out of cypress trees and flower beds was continued to the south of JAHANGIR'S TOMB at SHAHDARA, but here, as in other parts of this garden, where similar plantation has been recently made, brick water courses are necessary. The clerodendron planted two years ago along the wall of the causeways and the *chabutras* in Jahangir's tomb and the Akbari Sarai respectively is an improvement on the flowering plant it replaces, and its further use is recommended by the Superintendent, Archæological Gardens, Lahore.

The HAZURI BAGH maintained its usual popularity, and its lawns and shrubs flourished throughout the year.

In the North-West Frontier Province a sum of Rs. 3,651 was spent on annual repairs and maintenance of monuments. Of this amount Rs. 2,951 were expended departmentally and the balance of Rs. 700 through the Public Works Department.

BOMBAY PRESIDENCY WITH SIND.

By Mr. G. C. Chandra.

Conservation works to the protected ancient monuments in the Bombay Presidency including Sind progressed steadily during the year under report, the net grant for the year for conservation in this Circle standing at Rs. 1,12,718 as against Rs. 1,35,241 of the previous year. Out of the total grant, Rs. 29,657 were allotted to the Archæological Superintendent for carrying out works departmentally, and Rs. 83,601 were placed at the disposal of the Bombay Public Works Department for special and annual repairs, and for the construction of new quarters for officers and a Museum at MOHENJODARO. In addition to the Central grant, Rs. 8,000 were sanctioned by the Bombay Government for improvements to the area known as SHANWAR WADA within the Palace of the Peshwas in POONA CITY. The total expenditure incurred against the above allotments, by the Superintendent and the Agency Department came to Rs. 29,614 and Rs. 83,135 respectively.

In the Ahmedabad District extensive repairs to the retaining walls standing around the tank and encircling the small temples on the GHAT at VIRAMGAM, were continued and side by side with the work the ground immediately behind the walls was given a gentle slope outwards to prevent the inflow of rain water and to provide pathways for visitors. These pathways will be made shady by planting suitable trees at uniform distances. Much remains to be done at this place, but the general effect produced by the measures so far taken is very pleasing. The Municipality of Viramgam is contributing one-third cost of the total estimate excluding agency charges. The work of laying out a simple garden in the courtyard of AHMED SHAH'S MASJID in the Bhadra or Citadel of AHMEDABAD was taken up during the year. This monument is the old JAMI MASJID of AHMEDABAD dated 17th December, 1414 A.D. Neat pathways have been made as well as an ablution tank in the centre of the courtyard. All stones belonging to the two minarets dismantled long ago and scattered over the place, were arranged around the compound walls to facilitate their study by students of architecture (Pl. V, *c*). Ancient methods of construction have been followed in building the central ablution tank. Vertical and horizontal chases have been cut in the stones with corresponding tenons in others to make the joints thoroughly watertight. This kind of construction can still be seen in buildings at the hill-fort of Pavagadh. The corners of the pathways at their junctions have been emphasised by planting cypress tress of the slow growth variety. The modern brick-buttresses constructed to support the front wall of the masjid were found to be useless and were removed after carefully examining the stability of the old wall. The work has given satisfaction to the Muhammadan public using this old JAMI MASJID for religious purposes.

During the last heavy rains and floods in Gujrat one abutment of the small entrance to the compound of MALIK SARANG'S MOSQUE which is locally known as the QUEEN'S MOSQUE at SARANGPUR within the walled city was damaged but has now been repaired. The Municipality of Ahmedabad without informing this Department broke open the stone *jāli* inlets to the KANKARIA TANK at AHMEDABAD in order to bring rain water into it. This case of damage was reported to the District Magistrate who directed the Municipality to repair the damages at their cost to the satisfaction of the Archæological Department. The work was done satisfactorily (Pl. VI, *a*).

At CHAMPANER in the Panch Mahals District, special attention was given to the GODHRA, MANDVI and HALOL GATEWAYS of the Citadel. A wide gap in the west wall of the former gate used for vehicular traffic was closed after obtaining permission from the Collector of Panch Mahals, and the modern road diverted through the old northern archway of the gate. All bulging masonry walls which seemed likely to collapse were dismantled and rebuilt. Huge accumulations of earth and stone debris from the open area within the northern barbican and the west side of the gate immediately behind the gap were cleared and the extent of the plinth exposed. Similar work of clearance was done on either side of the wall to the south of the Mandvi gate and on the south and east sides of the barbican walls in front of the Halol gate. Open joints in the

brick masonry of this gate were closed by recessed lime pointing. One broken lintel of the opening over the second archway in the Halol gate was supported by angle iron and all well-carved bases of pillars lying loose over the area, were collected and arranged neatly in their original places. Open gutters for the disposal of rain water were dug within the compound of EK-MINAR-KI-MASJID where the preliminary work of clearance was done last year. Twenty small Nim trees were planted in the open area to give prominence to the different corners of the compound. Jungle to the south side of the minar was cut down and removed to afford a good view from the approach road.

In the Kaira District, some unfinished portion in the work of pointing to the BHAMARIA WELL at MAHMUDABAD was completed during the year. Nothing now remains to be done save the construction of low parapet walls around the well which cannot at present be undertaken without removing the two platforms built long ago for drawing up water to irrigate the neighbouring gardens.

Repairs to the roof of the *Maṇḍapa* in front of the GALTESHWAR MAHĀDEVA TEMPLE at SARNAL in the same district were continued after collecting the old carved stones near the monument. All dislodged and missing stones of the first retaining walls were reset and the gaps filled. Various carved stones of the *śikhara* recovered during the work of clearance were arranged near the temple. It is not advisable now to reset them in the *śikhara* as necessary repairs to it were carried out long ago by using plain blocks of stones. The progress of the work is very slow on account of its difficult nature and the remoteness of the site.

In addition to the general work of cutting down the wild growth of *lantana* bushes in the PORTUGUESE FORT at BASSEIN in the Thana District, the removal of débris from the rooms to the south side of the monastery attached to the St. Paul's Church was continued. The original stone pavement of the floors is now visible. All hollows in the areas surrounding this monument were filled in with the spoil earth.

At JOGESVARI the preliminary work of clearance started two years before was completed during the year. A long crack in the rock immediately over the sculptured panels depicting Śiva and Pārvatī, was stopped successfully by injecting liquid cement. Formerly there was no pathway giving access to the monument from the nearest road; after obtaining the landowner's consent one has now been made. Masonry pillars were constructed across a *nala* to serve as stepping stones for the convenience of visitors during the monsoon.

At the suggestion of Dr. J. J. Modi of Bombay the site of an ancient ruined temple in a garden at MULGAON, situated at a distance of about three miles from Andheri Station on the B., B. and C. I. Railway in the Bombay Suburban District, was examined departmentally. The temple was hopelessly damaged, probably by the Portuguese, as stones belonging to this monument are still to be seen in the masonry of the graves existing in the garden. Nothing remains of the temple except its wide basement constructed of long and thick slabs of stones joined together without mortar by clamps and dowels. On this base-

ment clear cut lines can be traced giving an idea of the extent of the masonry of the plinth. Three small copper pots (Pl. XXI) were recovered from three of the four small hollows in the base blocks of the four corner pillars of the main shrine or *garbhagriha*. These caskets contain nothing but earth. It is just possible that the contents were taken purposely from a *samādhi* of a Hindu religious teacher. Thus it may be that the monument is a *samādhi* temple built in memory of one whose dead body was presumably cremated on the eastern bank of a big tank standing close to the west side of the Hindu temple, but such relic-caskets from the *garbhagriha* of a Hindu temple are unusual and no such instances have been hitherto recorded.

At ELEPHANTA in the Kolaba District, all repairs, additions and alterations to the Custodian's quarters, started last year, were completed according to the plans approved by the Director General of Archæology in India. The foot of the hill wherein Cave No. 1 stands, was terraced to prevent rain water coming against the plinth of the building. The terraces are to be treated as gardens. The open gutters cut on the hill top last year had to be cleared to facilitate the flow of rain water. The construction of an open pavilion for the use of visitors to the caves has been started.

Preliminary work of clearance of modern huts from the compound of a temple at DEOTHAN in the Yeola Taluka of the Nasik District was taken up during the year. The temple was being used for residential purposes by villagers who were evicted by the Collector of Nasik. All modern additions and alterations were completely removed. This temple is very important, no similar one having been noticed in this Circle. It is partly Hindu and partly Jain and was probably erected during the supremacy of the local Yādava rulers of Chandor, ancient Chandrādityapura, between 850 and 1060 A.D. It seems that the original temple of Śiva facing east, was extended to its south and south-east sides by the Jains who came from Gujarat some time between 9th and 10th century A.D. The details of construction of this Hindu-Jain temple agree more or less with those of PANDAVAS WADA MASJID at ERANDOL in the East Khandesh District.

At KARLA in the Poona District, compound walls were constructed of stone masonry set dry with rough segmental copings laid in lime mortar. Similar walls around the quarters of the Custodian were repaired. The work of providing regular steps in place of a wooden staircase to the storied-caves will next be taken up. The result of treating the beds of the channels cut on top of the caves for the diversion of rain water, was quite satisfactory and very little water was seen flowing over their façades during the last monsoon.

The work of improvement to the rampart walls of SHANWAR WADA in the POONA CITY which was held in abeyance, was resumed during the year. A new parapet wall was constructed around the bastion at the south-east corner and the whole wall to the south thoroughly repaired. The grant sanctioned by the Bombay Government was spent in repairing the remains in front of the NARAYAN GATE, the paved open courtyard to the west side of the palace and the walls of a portion of the hall known as GANAPATI RANG MAHAL.

Repairs to the WATER PALACE at FARIA BAGH in the Ahmednagar District were in progress during the year. All the fallen portions of walls of the octagonal platform on which the main building stands, were thoroughly repaired in a manner similar to the existing construction. The four outer terraced platforms were cleared of the accumulation of silt which was used in making rough beds for pathways on four sides of the tank.

The special repairs to the cracks in the dome of the GOL GUMBAZ at BIJAPUR were continued. The work is extremely risky and moreover the accidental death of a cooly last year hindered the work. Precautions have now been taken by the Executive Engineer and ropes are now tied to the waists of the labourers and to the finial. The deep hollow in the area to the south-east side of the platform of the GOL GUMBAZ was filled in with the earth removed from the east and south sides of the ancient arched *dalans* around the monument. The fallen walls of the MASA BAVDI to the north side of the compound wall of the monument, were repaired in parts and the unfinished portion of the compound wall to the north and west sides was thoroughly pointed with lime mortar. The old compound walls of ASAR MAHAL were made secure by repairs leaving a small portion to be done next year. The enclosed area will be treated by laying out lawns and pathways. To improve the flow of water from BEGAUM TALAO to ASAR MAHAL several water-towers in the ancient pipe line were thoroughly repaired. The completion of this work, coupled with similar work done last year, solves the problem of bringing in water from BEGAUM TALAO to the area of the GOL GUMBAZ. Some items of repairs to the SANGIT MAHAL at TORVI-NAVARASPUR, such as the construction of parapet walls and rendering the tops of all walls watertight, were carried out and the whole work completed according to the estimate. Various portions of land together with all modern huts standing thereon in front of BUKHARI MASJID at BIJAPUR, have been acquired. Further steps to expose the ancient *dalans* and to put them in proper order will be taken up as soon as they are handed over to the Public Works Department by the Revenue Department.

At BADAMI, ancient Vātāpīpura, a tāluka town in the Bijapur District, special attention was directed to cave No. 4 (old No. 3), one of the most important Vaishṇava Cave Temples of India. The built up platform in front of this cave (which is little less than the height of a man) had a flight of steps in its centre. These were missing when Dr. James Burgess wrote his first report and an article on the group of caves at this place in the year 1874 and 1877 respectively (vide *Archæological Survey of Western India, Belgaum and Kaladgi*, Pl. XXIV and *Indian Antiquary*, Vol. VI, page 355). To facilitate access the steps were repaired by small stones set dry. As these steps proved unsatisfactory a new flight of steps on the old outlines was provided in the centre of the platform (Pl. VI, *b*). The plinth is adorned with thirty-four sunken panels of *gaṇas* or dwarfs and not seventeen as mentioned in the Memoir[1] referred to in the footnote.

[1] Cf. *Memoirs of the Archæological Survey of India*, No. 25.—"The Basreliefs of Badami," p. 30 and Pl. XV(*b*).

The HAREM of the MIRS at HYDERABAD suffered badly during the last rains on account of its weak construction. The roof and the floor of the verandah were made thorougly secure by the additions of new wooden posts, beams, and rafters.

New enamelled steel notice boards of standard design were provided at several first class central protected monuments in the Districts of Dharwar, West Khandesh, Thana, Kaira and Panch Mahals, Surat and Broach.

BIHAR AND ORISSA.

By Mr. J. A. Page.

In the Central Circle a sum of Rs. 58,442 (inclusive of agency charges) was spent on the conservation of ancient monuments in the year under review. Of this sum, Rs. 28,871 were spent in the Bihar and Orissa Province, where Rs. 24,817 went to Special Repairs and Rs. 4,054 to Annual Repairs; and the residue of Rs. 29,571 in the Central Provinces, where Special Repairs accounted for Rs. 18,028 and Annual Repairs Rs. 11,543.

The final grants for the two provinces were Rs. 30,094 and Rs. 30,466 respectively, and the sums that were allowed to lapse unutilized were thus Rs. 1,223 and Rs. 895.

Apart from the operations at Nalanda in Bihar, which were carried out by the Archæological Superintendent direct, all conservation work in the Central Circle was done through the agency of the Public Works Department, an additional charge of Rs. 23 per cent. in Bihar and Orissa and Rs. 30 per cent. in the Central Provinces on the estimated cost of the work being paid by the Archæological Department for this service.

On the conservation of the excavated remains at NALANDA an allotment of Rs. 5,900[1] was spent in full.

A brief description of the Nalanda site and its special features is given under "Exploration" and need not be repeated here.

Stūpa Site No. 3.—An important work carried out during the year was the making water-tight of the top of this great stūpa-mound to protect the exposed east face that had been cut back on to the alignment of the 4th stūpa to be built here. As explained in the previous report, this great mound contains in itself a succession of no less than seven stūpas, one built over and around the remains of an earlier one throughout the sequence, and the later integuments have been cut back in part to exhibit the earlier ones.

The waterproofing of the stūpa top involved building up the cut face some six feet all along this front, so as to allow of the top being concreted over as a series of shallow terraces, on which to lay a brick hearting to hide the concrete and give a more natural appearance to the ruined top of the

[1] The original allotment was Rs. 5,500 and this was subsequently increased by re-appropriation.

stūpa-mound. The terraces were specially made shallow to afford better bedding for the hearting that was to cover them; a steeper slope would have left this hearting insecure and liable to be swept down in heavy rain. Along the edge of the cut-face of the stūpa a concealed drain was made to prevent water running down the face; and this water is carried clear of the stūpa through a projecting iron spout, to fall on the ground some 50 feet below (Pl. VII, *a* and *b*).

This waterproofing was done for well over half the top area of the stūpa-mound contiguous to the cut face, and it was carried round the south face of the stūpa in a similar series of terraces. The gentle natural slope of the west side of the stūpa is being left undisturbed and so no waterproofing will be required on this side.

Incidental to this work the ruined N.-E. corner of the stūpa, as cut back, has been built up again where a subsequent casing of cross walls was in ruins. These casing walls had been erected when the stūpa was enlarged in ancient times, and they formed a boxing around the original structure, the interior of the "box" being filled with earth and débris. As the cutting back of the later integument of the stūpa exposed the earth filling in the "box" at this corner, this earth filling has been retained in position by a high concrete wall, itself left rough to represent the debris it supports. Similar concrete walling again has been inserted to replace and represent the débris infilling in the corresponding boxing walls at the S.-E. corner of the stūpa-mound; and thus in the repair the old features of the construction have been faithfully preserved.

The remains of the little shrine on the very top of the stūpa-mound have also been made weatherproof; its fragmentary walls and ruined image-pedestal having been laid over with concrete concealed beneath a further layer of brick hearting and its exposed floor picked up and replaced by new concrete laid to drain out through the iron spout mentioned above.

The exposure of so much of the inner core of this great stūpa-mound, for the purpose of exhibiting a portion of the several stūpas composing it, made the effective waterproofing of its top of prime importance for its preservation; and the elaborate measures described above may be hoped to have achieved this consistently with the preservation of the natural picturesqueness of the old mound.

Preliminary to these waterproofing operations the deep trench that had been cut through to the middle of the mound from the east face to descend some 60 feet to the bottommost foundations for the purpose of exploring the interior of the mound, was filled up again with laid brick, to make the mound a solid undivided mass again.

As described in the previous report, the solid brick hearting of the 6th stūpa to be erected on this site had been cut back on to the alignment of the 4th stūpa in the sequence, and last year the half of it to the south of the deep trench above-mentioned had been supported on a series of reinforced concrete lintels where it overhung by some 12 inches the recessed wing of the 4th stūpa façade. In the present year the cut hearting over the corresponding northern

wing has been similarly supported, so that all the exposed face of the 6th stūpa that overhangs the earlier 4th stūpa has now been secured in position.

In the account under "Exploration" in this report it is described how the shattered facing of the 5th stūpa in the sequence has been cut away to expose to view more of the 4th stūpa behind it. The projecting ends of this shattered facing, as further cut back, have been repaired and the little niches and attached pilasters that decorated it have been reconstructed in the new facing, in scrupulous conformity with the old work (Pl. VII, *c-d*).

The remains of the earlier little votive stūpa towards the north end of this 5th stūpa façade, over which this façade was subsequently built, have also been repaired for part of its height, so that the "mould" of its fallen dome is left exposed in the 5th stūpa façade.

The stair ascending the sixth stūpa in the sequence here has also been repaired, so far as its remains are traceable. From there access to the top of the stūpa-mound has been provided by means of a frankly modern stair; so that visitors may ascend to the shrine on the very top and from there obtain a bird's-eye view of the Nalanda site.

The only portion that has survived of the berm of the 5th stūpa in the sequence is that between the head of the north approach stair and the N.-E. corner tower. This part of the berm has now been made watertight by relaying with concrete, toned down, as always, to match the old work.

In the previous report it was mentioned that, of the whole sequence of stūpas erected on this site, the remains of the two last ones—the sixth and seventh—were being preserved on the west side of the stūpa-mound. In furtherance of this, the ruined outer facing of the berm on this side, belonging to the sixth stūpa, has been largely rebuilt for the whole length; the height being limited to that to which the old ruined wall had survived. The difference between this height and that of the terrace behind has been negotiated by stepping back the brickwork to represent exposed hearting.

As has been remarked in the previous report, the two corner towers of the 5th stūpa in the sequence have been exposed on the east façade of the mound by cutting back the later integuments that had been built about them. The top of the corresponding north end tower on the west face had been located some years previously, and had been protected with a tiled shed as a temporary measure. This shed has now been removed, and the upper structure of the tower repaired, the box walls that enclosed it having been dismantled sufficiently to allow it to be seen rising out of them at this corner of the stūpa-mound. This corner tower was much ruined towards the top, and clearance of débris that covered it revealed a square chamber inside with deep niches in each internal face and a little doorway for access in the east side. It has been repaired in such a way as to leave the top open, so that its interior may be seen from the berm of the sixth stūpa around it.

At the N.-E. corner of the stūpa-mound, the remains of a couple of compound walls exist contemporary with the 7th stūpa in the sequence. These compound walls themselves are built one over the ruins of the other on the

same alignment, and apparently the later one was erected when the level of the compound it enclosed rose sufficiently to demand it, through natural accumulation.

The lower of these two walls starts from a level some 3′-0″ above a wide projecting *chabutra* belonging to the 6th stūpa, and so that this *chabutra* and its contiguous paving might be exhibited below them, these walls have been held up in position on a series of concrete piers and lintels, through the inter-spaces in which the earlier features can be seen.

The walls themselves have also been repaired, the upper one being left cut back to reveal the concrete coping of that below it.

To carry away rain water from about the base of the stūpa on the north and east fronts a couple of *pakka* drains have been constructed, one along the 5th stūpa façade on the east and the other, which takes the drainage from the north front of the stūpa, along the wall of the adjoining monastery No. IB. These drains meet at the S.-E. corner of the stūpa-mound, and continue as one out to the lower ground beyond the Nalanda area.

The course of the second of the two drains mentioned above is being paved over, along the north front of the stūpa, at the 6th Level in the sequence and, as remarked in the account under "Exploration", access to the stūpa-mound will be afforded by way of this paving over the course of the drain, through a wide passage formed between the remains of the 7th level structures that rise on either side of it.

Monastery Site No. 1.—Further work towards completing the conservation of this monastery was also undertaken; and the undermined walls of the cells in the S.-E. corner exposed in the excavation this year have been underpinned, the ruined door jambs repaired, and reinforced concrete lintels inserted over the door heads at the Devapāla level to support the later work *in situ* above (Pl. VIII, *a* and *b*).

The door jambs of the later levels towards the top of the structure here have also been repaired, and the exposed tops of the cell walls have been made watertight with a layer of concrete beneath a final covering of brick hearting.

The back face of the verandah parapet walls at these upper levels, on all the three sides of the monastery where it is exposed, has been underpinned and repaired; and the layers of earth and débris that separated these walls into their different periods have been raked out and replaced by concrete to simulate them. Along the east verandah wall at the topmost level a length of concrete parapet has been reconstructed to match the old *in situ* and to keep the wall below watertight.

As explained in previous reports, it has been the aim in conserving these remains to exhibit a definite portion of each of the many levels of occupation over a part of the area; and as in this particular monastery the levels fall into two clearly defined groups, the higher ones are being preserved over the northern half of the plan and the lower over the southern half, the junction between the two being taken centrally through the west entrance gateway.

To support the earth of the upper level verandahs in the north half of this gateway a high concrete wall has now been built, its exposed face being left rough to represent the débris that had to be cut through to reach the lower verandah levels in the southern half.

Consistently with this design the front wall of the sanctum in the east side of the monastery has been cut through on its centre line, half of the wide doorway of the lower level being exposed and half of the corresponding doorway of the upper. This work entailed the substantial rebuilding of the old door jamb of the earlier structure below and the supporting of what remained of its original door head with concrete lintels; and the half portion of the later structure preserved above had to be held up on brick underpinning (Pl. VIII, *a* and *b*).

The junction of the upper and lower groups of verandah levels on this east side of the monastery had been arranged immediately north of the shrine, and the earth of the upper levels here had been supported on a retaining wall of brick some years back. This retaining wall has no part in the original structure, of course, but as it was built of the same material it tended to confuse the plan of the monastery as exposed. To obviate this confusion and render the remains as intelligible as possible to the visitor, this brick retaining wall has now been replaced by one of concrete, again left rough to represent the débris it supports.

A prime essential for the preservation of these remains is adequate drainage from their floors and pavements, since no roofs now protect them from the weather. To this end the original concrete floors of the cells and verandahs have been relaid, and to ensure that no water lies on them to jeopardise the safety of the high adjoining walls a new drain has been constructed below the floor of the long lower verandah on the south side of the monastery, to carry away the rain water that would otherwise collect there. This drain has been cut at the Devapāla level, and it also serves all the cells along this south side, which again have been exposed at the Devapāla level.

Along the west verandah of the monastery the cells have been exposed at the lower pre-Devapāla levels, and the long verandah drain has been brought to discharge into one of these, thence being carried through a hole cut into the exterior west wall of the monastery, out to the court in front.

The entrance vestibule of the monastery has been left at the Devapāla level over the northern half of its plan and the still earlier levels below have been exposed over the southern half. Drainage of these earliest levels has also been contrived by cutting a hole through the exterior parapet wall of the vestibule, whence the water is taken through the concrete underpinning of the later stair approach, out again to the court in front. The effective drainage of all the many levels exposed presented something of a problem, but the arrangements adopted have got over the difficulty.

The later stair approach just mentioned was underpinned with concrete on its external face in the previous year, and during the year under review the exposed core of the interior has similarly been underprinted, the débris

on which it was founded having been cut away to permit of this. As has been remarked in the previous report, the level from which this wide approach stair rises is some 10 feet above the next earlier level below, and as this earlier level had to be exposed, the later stair has had to be held up in the air, as it were, on concrete underpinning along all sides, the underpinning representing the débris that existed beneath it.

Inside the inner quadrangle of the monastery the *chabutra* in front of the brickbuilt "Caves" has been relaid with concrete; and in the N.-E. corner of the quadrangle a drain outlet, bricked up in an early repair of the wall, has been opened out again to disclose the evidence it affords of the level of the courtyard paving when the drain was in use.

The drains from the courtyard, at all the three levels at which they exist, represent each a different period of occupation. All these three drains take off from the N.-E. corner of the courtyard and proceed each through the second cell from the north along the east front, to discharge outside the monastery. This cell has now been excavated down to the bottommost drain, and is being left open as a sort of man-hole to facilitate the clearing of this drain, which has been made use of again to carry away water from the courtyard of the monastery. The excavation was taken through the solid brick hearting in which the three superimposed drains were enclosed, and the needful underpinning of ruined portions of the cells wall thus revealed has been done.

In the S.-E. corner of the monastery the original stair at the Devapāla level, which gave access to the upper storeys of the building, has been repaired with new concrete treads to conform with the old work.

Monastery Site No. 4.—In this monastery all the cells, both of the Devapāla level and of the later level above, along the northern side and again along the northern half of the east side have now been put in repair, the work involving extensive underpinning and the insertion of concrete lintels over the door-heads (Pl. VIII, *c* and *d*).

Underpinning has also been done to the corner of the entrance vestibule at this level, where the original wall was badly shattered and bulged towards its bottom. The exposed wall tops throughout the monastery have now been made watertight with a layer of concrete, which has been covered over with brick hearting as usual to preserve the natural appearance of the ruined remains.

Monastery Annex, Site No. 5.—The long exterior wall on the east side, which was substantially repaired in the previous year, was raised some two feet higher, and the repair completed with a layer of concrete and superimposed hearting to make the wall watertight.

Monastery Site No. 6.—The most extensive work done during the year was at this monastery, the fourth from the south along the eastern monastery range. Here the cell walls on all four sides of the quadrangle were put into repair, much of the old work having to be dismantled and rebuilt, so badly shattered and bulged was it found on excavation. In this work the original little wall niches and cross-bar holes have been repeated in the repair, as

well as the special construction of the door jambs and sills to accommodate the original joinery, though the old wood doors and frames themselves are not being replaced. Included in this repair was the main shrine chamber, centrally in the east side.

The tops of these cell walls have been made watertight with a layer of concrete concealed from view beneath a few courses of brick hearting (Pls. IX and X).

The monastery is on a large scale, measuring some 150′ × 120′ along the cell walls, and the height to which these walls were refaced averaged some eight feet.

The main west entrance of this monastery was also built up, largely from the foundations, the ruin of this portion having been all but complete. Definite, though fragmentary, evidence of its individual features had however survived, and advantage was taken to reconstruct them in the repair. The collapsed exterior wall along the eastern front of the monastery was also built up again for its whole length to the approximate height of the cell walls around the interior court.

Brick-making operations, etc.—About 117,000 bricks of the special large Gupta size needed for the appropriate repair of the Nalanda remains were made on the site by the Archæological Superintendent at a cost of Rs. 19 per thousand, as contrasted with Rs. 55 per thousand quoted by an outside contractor. In addition, 11,000 bricks of modern British size were made at a correspondingly reduced cost. The earth used for making these bricks was obtained from the actual excavation of the remains, so that a double economy was achieved through the saving in digging and carrying. The equivalent of approximately 400 feet run of reinforced concrete lintels at 1′-0″ wide and 6″ deep was also made on the site, the reinforcement being contrived by embedding in both areas of the "resistance couple" galvanized iron wire netting, so that the lintels could be used equally well either side up.

As has been indicated in the foregoing, these lintels have been used as necessitated for door heads of cells and for supporting on their own alignment later structures that had been erected on the ruins of earlier ones, where both are being left exposed to view.

The conservation of the JARASANDHA-KA-BAITHAK at RAJGIR under reference in the last report was carried further by relaying the terrace on top with new concrete to make the fabric watertight, a special supplementary estimate for this work amounting to Rs. 954 (exclusive of agency charges) having been sanctioned and funded. The expenditure incurred on this work during the year was Rs. 926.

A short length of the "NEW FORT" WALL at RAJGIR also received attention. This length of wall is situated immediately opposite the Dâk Bungalow and is relatively well preserved. Here the fragmentary stones of an incongruous repair by the Public Works Department a few years back were dismantled and replaced by massive old boulders retrieved from the vicinity and set up in the wall more in keeping with the character of the old work. The cost of

these repairs was Rs. 125 against a revised allotment of Rs. 349; and they were an item in the original estimate of Rs. 4,853, against which the expenditure incurred to date amounts to Rs. 1,614.

A further sum of Rs. 23, against an estimate of Rs. 24, was spent on renewing the damaged tiled roof of the little sculpture shed erected on the site of a ruined JAIN TEMPLE on the VAIBHAR HILL at RAJGIR. The shed houses a few sculptures of the Late Mediæval period, including two images of the Buddha seated on a lion throne in the conventional attitude of meditation and four other sculptures which have not been fully identified.

A brief note on the history of Rajgir and a description of the remains will be found in the report for the year 1924-25.

At the TOMB OF MAKHDUM SHAH DAULAT at MANER in the Patna District, a sum of Rs. 93 against an estimate of Rs. 92 was spent on petty repairs to the modern timber framework supporting the roof of the old mosque in the tomb enclosure. An architectural note on the tomb, which was erected early in the 17th Century and is one of the finest monuments of the Mughals left in the Province, has been given in the report for the year 1922-23.

At the two old CHERO FORTS at PALAMAU, the PURANA and NAYA QILA, located in the dense jungle of the Forest Reserve, the repairs described in the previous report were completed at a cost of Rs. 4,055 against an estimate of Rs. 4,080, Rs. 657 being spent during the year. The principal work that was left to be done was the removal of the remaining portions of the great roots that penetrated and interlaced the ruined walls of the forts. These heavy roots and stumps have now almost all been removed, and the few portions that remain are being destroyed by periodic treatment with sulphuric acid, poured into holes bored deep into the stumps. A description of the forts has been given in the report for the year 1922-23, along with a brief note on their history.

The urgent repairs under reference in the previous report for the conservation of the remains on the ROHTASGARH FORT have now been completed at a total cost of Rs. 20,017,[1] of which the Local Government generously contributed half; the expenditure in the year under review was Rs. 17,613,[2] and the Archæological Department's allotment Rs. 8,808.[3] The estimate for this work was Rs. 25,182.[4]

Roofs have been made watertight with new concrete terracing on the many individual palaces in MAN SINGH'S MAHAL; and the fallen and dilapidated oriel-balconies of the DARBAR HALL and the BARADARI therein have been respectively rebuilt and repaired. Two heavy buttresses have been erected against the bulging western wall of the Darbar Hall, which may now be considered secure against any danger of collapse (Pl. XI, *a* and *b*).

Chhajja joints generally about the palaces have been secured against leakage, along with the junctions of the balcony roofs with the façades from which

[1]—[3] Exclusive of agency charges at 23 per cent.

[4] Inclusive of agency charges.

they project; the aim in all this work being to render these old remains quite weathertight—a prime essential for their preservation. Among the more minor items in the MAHAL, a box drain has been constructed along the south façade of the HATHI POL to carry away water from the Baradari court, and steel stanchions have been provided in the Baradari itself to support fractured lintels.

Concrete terracing, again, has also been done on the GHAZI DARWAZA, the RAJGHAT GATE, the LAL DARWAZA, the SINGHI DARWAZA, and the KATHAUTIA GATE, in the circumvallations of the Fort; and lesser waterproofing repairs carried out to the roofs of the JAMI MASJID of SHER SHAH, the TOMB and MOSQUE of HABBAS KHAN, and the TOMB of SAQI SULTAN, within the Fort area.

In addition to the above works, a number of items in the second estimate of Rs. 21,179[1] for less urgent repairs were put in hand; and new concrete floors were provided in certain of the palaces in the Mahal where the old had broken away. The expenditure incurred on these less urgent works amounted to Rs. 2,232,[2] of which again the Local Government contributed half.[3]

At SASSARAM, in the Shahabad District, a sum of Rs. 1,430, against an estimate of Rs. 1,589, was spent in providing three huts for chaukidars, one each at SHER SHAH'S TOMB, HASSAN SHAH'S TOMB, and ALIWAL KHAN'S TOMB. The importance of these monuments for the architectural and political history of the province is well known; and the accommodation now provided on the spot for the chaukidars will ensure more adequate protection of the monuments against damage and defacement.

A descriptive account of these tombs and a historical note on the Suri dynasty associated with them have already been given in the report for 1922-23.

At ARRAH HOUSE, the well-known Mutiny Memorial at ARRAH, in the Shahbad District, the lightning conductors were overhauled and put in order at a cost of Rs. 78, against an estimate of Rs. 92. A brief historical note on this monument has been given in the report for the year 1923-24.

Towards completing the small residue of repairs under reference in the last report at the minor temples at BHUVANESVAR in the Cuttack District, a sum of Rs. 217 was spent, bringing the cost of this work to date to Rs. 670 against an estimate of Rs. 806. A description of the work has been given in detail in that report and an account of the Bhuvanesvar temple architecture in the report for 1922-23.

On the acquisition of a group of what are believed to be VEDIC BURIAL MOUNDS at NANDANGARH, in the Champaran District, a sum of Rs. 2,027 was spent against an allotment of Rs. 2,190. The mounds are situated on the land of the Bettiah Raj, and the cost of acquiring them represents the sum paid as compensation to the *raiyats;* the Raj and its tenants having expressed their unwillingness to execute an agreement in respect of the mounds under Section 5 of the Ancient Monuments Preservation Act. The mounds were ex-

[1] Inclusive of agency charges.

[2] Exclusive of agency charges.

[3] The total grant made by the Archæological Department for these Rohtasgarh repairs was Rs. 9,924 *plus* agency charges of Rs. 2,283.

cavated by Dr. Bloch in 1905, and his detailed account of the discoveries made in them and the evidence they afford for associating the mounds with the pre-Mauryan period and possibly even the Vedic period of India has been given in the report for the year 1905-06.

Of the monuments under maintenance nearly all have been described in previous reports; the following may be mentioned here:—

The CHANDESVARI PILLAR at JAJPUR in the Cuttack District. This is a graceful shaft of Late Gupta origin, standing 33 feet high to the top of its capital. It is based on a pedestal of three square superimposed blocks, together nearly 5′-6″ high, and the shaft itself is a monolith of some 19′-6″ in height and 3′-6″ in diameter. The shaft is 16-sided for the greater part of its height and is surmounted by a 16-sided capital, 4 feet high, ornamented with *kīrtimukha* heads festooned with heavy pearl garlands. Over this member is a lotus calyx, and over this again a square slab carved with a cyma reversa moulding on two of the opposite faces and with three atlantes on the other two. The whole pillar, except for the base pedestal, which is left rough, is exquisitely chiselled and highly polished. The crowning figure on the abacus is missing; it was probably a Garuḍa. It seems probable, too, that the rough base now exposed was originally intended to be encased with an ornate facing, and possibly such a facing has been removed.

CENTRAL PROVINCES AND BERAR.

By Mr. J. A. Page.

A further sum of Rs. 6,508, making Rs. 14,966 to date, was spent towards completing the repairs that have been in hand for the past three years on the FORT WALLS at CHANDA. The current allotment for this work was Rs. 6,514.

These repairs, which had for their end the weatherproofing of the four main gates and *khirkis* and a limited length of the fort wall adjoining them, have now been completed except for a small amount of work remaining at the JATPURA GATE. Gate roofs and the tops of their flanking bastions have been relaid, for the most, with stone flags on a concrete bed, the heat of Chanda in the summer being so great as to render an exposed concrete surface unsuitable. A large item in the outlay was the re-building of the fallen bastion of the BIMBA GATE (Pl. XI, *c* and *d*).

The Chanda Fort is perhaps the most interesting example of a Gond fortification that has survived, and the repairs now done may be hoped to keep its principal features in existence for many years to come. A description of the Fort and a brief note on the Gonds who founded it in the 15th century have been given in the report for the year 1922-23.

In completing the work of raising the height of the new walls erected in the breaches of the two ruined bastions of the BALAPUR FORT, in the Akola District, a further sum of Rs. 59 was spent, making a total of Rs. 1,727 against an estimate of Rs. 1,956. The need for the work has been explained in the

last report, and in that for the year 1922-23 a description of the fort and a brief note on its history are given.

At the old Bahmani FORT of GAWILGARH in the Amraoti District of Berar the repairs described in detail in the last report were carried to completion at a total cost of Rs. 3,203 against an estimate of Rs. 3,201, Rs. 1,366 being spent during the year.

The three disturbed arches at the south end of the prayer chamber in the JAMI MASJID have been supported on a tee-iron framing beneath their soffits; and three buttresses have been erected against the inclining west wall of this mosque. The remains of the solitary little *chhattri* on the north end pylon of the mosque have been secured, and the one surviving instance of this feature in the contemporary architecture of the district has thus been preserved. The ugly white pointing and plaster coating that disfigured the DELHI GATE of the fort and its ruined flanking bastion have now been removed and replaced by other pointing, toned down to blend with the weathered appearance of the old fabric; and the walls that blocked the archways of the so-called RANI MAHAL have been cleared away. A brief note on the history of the Gawilgarh Fort and a description of its features will be found in the report for 1922-23.

In the FORT OF ASIRGARH in the Nimar District repair was carried out to the entrance gateway of the JAMI MASJID, a splendid piece of architecture in the Faruqi style that was erected in the reign of the Mughal Emperor Shah Jahan.

This gateway is a triple-arched structure at the south-east corner of the mosque enclosure, and owing to the collapse, many years ago, of the *dalan* contiguous to it on the south, the thrust of the roof vaults has been left uncountered, with the result that dangerous cracks and displacements have appeared in the fabric. To remedy this a heavy rubble stone buttress has now been erected against the exposed arch pillars and broken vault at the south end of the gate, and the disturbed arches over the pillars through the gateway have been supported on four new masonry piers centrally beneath their soffits. The cracks and open joints in the masonry have been closed with mortar, and the concrete roof of the gate has been grouted with cement to keep the structure watertight. The expenditure incurred on this work was Rs. 559 against an estimate of the same amount. The Asirgarh fort and its Jami Masjid have been described in the report for the year 1922-23, where a note on their history is also given.

An important work carried out at BURHANPUR during the year was the erection of a masonry revetment wall below the TOMB OF SHAH NAWAZ KHAN to resist further erosion of the high river bank on which it is built.

This erosion had already gone so far as to bring about the collapse of half of one of the detached little corner pavilions that originally formed a group with the tomb, though this appears to have occurred many years ago. Some three years back an attempt to counter this erosion by means of a series of groynes constructed of *ballies* and stones was made, with the idea of diverting the river flow in the monsoon floods. This expedient, however, has not proved

a success; for the groynes have suffered severely in each monsoon. It is hoped that the revetment wall now built will achieve its purpose and safeguard the fine old 17th century tomb above. An architectural description of this tomb and a note on Shah Nawaz Khan have already been given in the report for 1924-25. The cost of constructing the revetment wall amounted to Rs. 3,366 against an estimate of the same figure. In addition, a sum of Rs. 43 was spent on minor works to the groynes.

At Eran, in the Saugor District, the colossal image of the Boar incarnation of Vishṇu had developed serious cracks throughout its body, and with a view to forestalling further damage a series of brass bands have been fixed around the image both circumferentially and laterally. Opportunity has been taken in this repair to refix in position a large carved piece that had fallen long ago from the flank of the boar. The necessity for these bands is regrettable but it is hoped that when they weather to a characteristic dull grey-green they will not be aggressively conspicuous; there is, unfortunately, no other way of dealing with the damage. This boar forms one of a group of 5th century remains here that are of exceptional interest even apart from their Gupta origin; for, as mentioned in the report for 1923-24, where a description of them in some detail is given, they bear important historical inscriptions associated with the Gupta dynasty and with the Hun invasion of India. The estimate for this work as revised was Rs. 313 and Rs. 316 were spent on it.

The Sita Devi Temple at Deorbijia, in the Drug District, was also under repair, a sum of Rs. 422 against an estimate of Rs. 733 having been spent on the building up in plain ashlar of a gap in the decorated plinth of the *śikhara* wall that had been promiscuously filled with old carved stones, the reconstruction in similar masonry of the ruined porch-plinth, the replacing of missing paving in the shrine floor, and the filling of cracks in the disturbed masonry of the façade over the entrance doorway. The temple, a Saivite shrine, appears to date from early Maratha times. It is constructed of red sandstone elaborately carved from base to crowning *āmalaka*, and it is practically intact, except for a fallen porch. The attenuated form of the *śikhara* is emphasised by the treatment of multiple facets into which it is vertically divided; the central facet in each façade being itself decorated with a diminutive *śikhara* form. The subdued lace-like surface decoration of the upper *śikhara* is contrasted below with a horizontal treatment of undercut bands binding the many facets into unity; and the contrast is blended into harmony by the undercut *āmalaka*-blocks that ascend the four corners of the *śikhara*. Four continuous bands of sculptural carving decorate the lower façade, separated by undercut mouldings; and the high moulded plinth below is ornamented with conventional designs. A large and elaborately treated *āmalaka* crowns the whole and although the ornamentation that envelopes the temple is so profuse, it is appropriately subordinated to the general design. The sculptural carving portrays human and celestial figures and griffins, and includes images of Sūrya, Siva, Durgā, Lakshmī and Gaṇesa. A dedicatory figure of this last deity also appears centrally in the doorway lintel, flanked by the usual Navagraha figures.

Close to the temple is a Satī Pillar, which changes from a square shape below to sixteen sides and then circular; it bears the usual sun and moon and fore-arm at the top, and an all but obliterated Nāgarī inscription at the base.

On the KANTHI DEVAL TEMPLE at RATANPUR, in the Bilaspur District repairs were in progress against an estimate of Rs. 564, the amount spent during the year being Rs. 512. The temple, which is a square two-storeyed structure built on the edge of a tank, was becoming dangerously dilapidated through the subsidence of the walls on the south and west sides which caused them to incline outwards and crack at the corner. To arrest this movement three substantial buttresses are being erected, two on the west side and one on the south facing the tank. Cracks and open joints in the disturbed walls are being filled with mortar, and new ashlar masonry provided where the old face-work had gone. A descriptive note on this temple and a brief account of the local Haihaya Rajas who are reputed to have built it have already been given in the report for the year 1922-23.

Of the monuments under maintenance a large number have already been described in previous reports; the following may be mentioned here:—

The MAHADEO TEMPLE at KODAL, in the Damoh District. This little shrine, which probably dates from the 12-13th century, is now much ruined, the original porch and approach steps and much of the upper portion of the *śikhara* tower having disappeared. The rest of the *śikhara*, however, is largely intact, and is noteworthy for the elaborate decoration that adorns it. Its façades are in the *Pañcharatna* style of five recessed planes with a dominating central facet; and while the upper portion of its curving *śikhara* is treated with a flat lace-like pattern of diminutive *chaitya*-shapes, undercut at the angle-facets with square *āmalaka* forms, the lower façade is decorated with three rows of sculptured figurines alternating with continuous moulded string-courses; among these figurines are represented Śiva and Gaṇeśa.

The door-jambs of the entrance are elaborately ornamented with figures of Gaṅgā and Yamunā, door-keepers, and human pairs in amorous attitudes; and on the lintel above are carved the Nine Planets and the Seven Mothers of Hinduism along with Siva, and Gaṇeśa. Inside the temple are a couple of the usual *liṅgas*. Close to the temple is an attendant structure, locally known as the MARH or Treasury, for the accommodation of the *pūjāri* and pilgrims; a simple building of columnar-trabeate construction, now much ruined, in which the remains of a small grain store in one of the bays are still to be seen, the presence of this feature being responsible for the local designation "Treasury".

The remains of THREE FALLEN TEMPLES in the neighbouring villages of PADAMPUR and GANESHPUR, in the Bhandara District. These ruins are principally noteworthy for the great size of their component structural members, which now lie in heaps on the sites of the old shrines. These stones are of very rough and coarse texture, a circumstance that probably accounts to a large extent for the almost total lack of carved decoration on them. On one of the Padampur shrines practically the only decoration is a roughly carved dedi-

catory figure of Gaṇeśa in the centre of the doorway lintel, which is indicative of a Saivite shrine. From the traces of plaster still adhering to some of the stones it would appear that the temples were originally finished in this material, In the absence of any definite internal evidence it is difficult to assign a date to these shrines, but from the great size and simplicity of their structural members it seems certain that they must date from very early mediæval times.

The ruined remains of the FORT at PAUNI, also in the Bhandara District. Only some 500 yards of the original circumvallations now exist of the Pauni Fort, the remainder being traceable only in the encircling mounds of its débris. This portion is located on the west side of the fort and embraces the south-west corner. It is quite well preserved and is a very picturesque feature, raised, as it is, on a low hillcrest that runs alongside the road into Pauni village. This length of wall is surmounted by large *kanguras* in relief and contains five bastions, on two of which are raised small *chhattris* in pairs; and at the north end of the remains is a large arched gateway. The upper part of the fort wall is of brick and the lower of stone. The Pauni Fort was built by the Marathas, and was the scene of a successful assault by the British in the campaign against Appa Sahib in 1818.

The ruins of the VISHNU TEMPLE at RAMTEK, in the Nagpur District. All that now survives of this temple is a ruined porch and a mutilated image, life-size, of the Vāmana Avatāra or Dwarf Incarnation of Vishṇu, which are located on the crest of the western ridge of the Ramtek hill. The porch is a simple stone structure composed of two square front pillars of grey stone, with lintels and roof slabs of the same material, and, behind these pillars, four half-pillars resting on an ornamental dado and themselves lightly decorated with simple carving; these latter portions of the structure are of red sandstone as again is the Vishṇu image. The temple is reputed to be the oldest at Ramtek and from the style of the remains they are probably assignable to the Early Mediæval period.

Enamelled iron notices for protected monuments.

A further sum of Rs. 932, against a current allotment of Rs. 950, was spent on the purchase of 114 notices on enamelled sheet-iron for erection at the protected monuments in the Central Provinces. The total number of such notices now obtained is 351, namely forty in English, 186 in Hindi and 125 in Marathi, and this number meets the needs of every monument in the province, with a reserve of 20 per cent.[1] These notices convey a warning against damage and defacement under the penal provisions of the Ancient Monuments Preservation Act of 1904, and English notices will only be erected, in addition to veracular notices, at those monuments that are likely to be visited by Europeans, a single notice in the local vernacular only being provided for the others. The notice boards are being stored in the office of the Archæolo-

[1] The total cost of these notice boards has been Rs. 2,885 which has been spread over three years.

gical Superintendent and will be issued as required on application by the Public Works Department officers concerned.

BENGAL AND ASSAM.

By Mr. K. N. Dikshit.

The expenditure on conservation in Bengal amounted to Rs. 26,864 during the year 1927-28, covering as many as seventeen items of special repair works on which a sum of Rs. 17,559 was spent, the balance being the charges on account of annual repairs. The most important work is that relating to the preservation of the colossal temple excavated at PAHARPUR where a sum of Rs. 5,500 was spent. Below will be found an account of the exploration carried out at this site during the year.

It is difficult to determine with accuracy the plan of the Jaina Vihāra of Guhanandi which we have reason to believe existed at the Paharpur temple site from at least early Gupta times (4th-5th century A.D.). With the exception of the remains of the Jaina Stūpa of Kushān date excavated by Cunningham at Mathura, no example of a structural Jaina monument in Northern India before the mediæval period has ever been discovered. If the later Gupta temple and the early Pāla Vihāra are to be considered more or less as expansions and amplifications of the original Jaina Vihāra, one can imagine a square shrine with four entrances facing four images of the Arhats (*Chaturmukha*, modern *Chaumukha*) with probably an antechamber on each side forming what may be called a *Sarvatobhadra* (symmetrical on all sides) *Vihāra*. A monastery for the residence of Śramaṇas or Jaina monks may have existed at some distance from the shrine. The existence of Chaturmukha and Sarvatobhadra temples is known to Jainism in different ages and climes. Indeed, Fergusson[1] has called the "four-faced" temple as the peculiar Jaina form. With the gradually increasing power of Brahmanism under the influence of the Gupta Empire and the rise of Mahayanism in Bengal, it seems likely that some time in the 5th or 6th century A.D. the vast scheme of extension of the *Chaturmukha* Vihāra was undertaken. The height of the building must have been considerably raised, probably enveloping the earlier structure in the centre; three terraces built in which the main shrine occupied the top of the highest terrace; the second provided with halls and antechambers surrounded by a continuous circumambulatory passage with further projections added at the four cardinal points to extend the building proportionate to its height; and an extensive staircase provided on the north for access to the circumambulatory verandahs on the first and second terraces. The scheme of embellishment of the walls of the basement and of the first and second terraces comprised the fixing of horizontal bands of ornamental brickwork, cornices, terracotta plaques and stone images in niches, and refers itself essentially to the late Gupta epoch, roughly the 6th century A.D. The evidence of later repairs

[1] *History of Indian and Eastern Architecture*, Vol. II, p. 23.

of walls, floors and halls, involving the resetting and to a less extent renewal of whole friezes of plaques attributable to the 8th and 10th centuries A.D. does not indicate the addition of any of the fundamental elements of the plan and decoration of the Late Gupta temple. The foundations of the outer walls of the basement were indeed laid solid to a depth of 8′ below the original ground level and strongly supported by 19 offsets projecting not less than 3′-9″, from the main wall, with the result that the adjacent parts of the walls just above the foundations are in the most perfect condition while other parts have more or less suffered. It can therefore be assumed without hesitation that the type of structural temple at Paharpur which is so far unknown to Indian archæology was evolved in the Gupta period in Bengal itself, its probable origin being traceable to the fourfaced Jaina temple.

The text-books on architecture are agreed that the three main divisions of Indian temple architecture are the Indo-Aryan (or Nāgara), the Dravidian and the Chalukya (or Vesara). The type of symmetrical (*Sarvatobhadra*) temple with three or four raised terraces (*tritala* or *chatustala*) we find at Paharpur, was not apparently developed further on Indian soil and was ultimately forgotten. It can however be recognized, as the type of Indian architecture which most profoundly influenced that of Further India, especially Burma, Java and Cambodia. The nearest approximation to the plan and superstructure of the Paharpur temple that càn be found anywhere is that afforded by the temples known as Chandi Loro Jongrang and Chandi Sewu close to Prambanam in Central Java. The general view of the former [1] with its angular projections, truncated pyramid shape and horizontal lines of decoration reproduces the prominent characteristics of the Indian monument. The inner plan of the Chandi Sewu[2] shrine strikingly resembles the plan of the central shrine and second terrace at Paharpur. As these examples date from the 9th century A.D. or about three centuries later than Paharpur, the possibility is clearly suggested of the Indian example being the prototype. In view of the closer similarity between these types, it seems unnecessary to suggest any later source of Javanese inspiration. [3] The communication between Eastern India and the Archipelago was most active between the 5th and 9th centuries A.D., and much of the Indian influence that can be traced in Indonesian art, architecture and religion can be attributed to this intercourse.

The conservation measures adopted at PAHARPUR aimed at the preservation of the existing structure, without attempting to restore or replace any missing or displaced members, and were limited in particular, to the south-western and south-eastern quadrants of the monument. The general view of

[1] Coomaraswamy: *History of Indian and Indonesian Art*, Pl. CXV, No. 348.

[2] Fergusson: *History of Indian and Eastern Architecture*, Vol. II, p. 435.

[3] Coomaraswamy (*History of Indian and Indonesian Art*, p. 205) suggests that Kashmir was presumably the source of Sumatran Mahāyāna Buddhism and that the Stūpa founded by Lalitāditya's minister (circa 725) was probably the prototype of Javanese architecture. The close relations between the Buddhist kingdoms of Śrīvijaya and Bengal, revealed by the Nālandā Copper-plate of Devapāla leave little doubt about the source of Mahāyāna Buddhism. The architectural type of the Kashmir examples may itself have been influenced by Eastern India, as the period of Lalitāditya brought Kashmir into contact with the Indian continent, more closely than ever previously in its history.

the monument from south-west (Pl. XII, *a*) illustrates what is now the best preserved side and affords a glimpse of what the monument must have originally looked like in its solid strength with the lines of its projecting and re-entering angles continued vertically to a height of 40′ across horizontal bands of moulding over the terraces, rising one upon another. Pl. XII, *b* shows the details of the south-eastern quadrant. Pls. XIII and XIV, *a* and *b* illustrate details of the treatment of the high walls and windows of the second terrace. The condition of the leaning basement wall in the south-west sector, and its improvement after repairs can be seen at a glance from figures *c* and *d* of Pl. XIV.

An important monument in hand for conservation was the STONE PILLAR near MANGALBARI in the District of Dinajpur, known variously as the Bādal pillar, Haragaurī pillar or Garuḍastambha pillar. In a flat and moist country, where the only memorials of pre-Muhammadan times are the jungle-clad mounds and half-silted tanks—thanks to the human and natural destructive agencies—it is refreshing to meet a real monument, carrying the visitor through the space of a thousand years at a glance. The pillar of which the shaft is broken and the top together with the Garuḍa capital is lost, contains an almost complete inscription in twenty-nine beautifully engraved lines. It extols in flowery language the family and deeds of Guravamiśra, the hereditary Brahman minister of the Pāla King Nārāyaṇapāla, whose rule extended over more than half a century in the latter part of the 9th and the opening years of the 10th century A.D. Since 1780, when the pillar was first brought to the notice of Sir Charles Wilkins, it has been known to be in a slanting position. A *pucca* cemented platform was later erected and an iron fence set up around the base. As the site where the pillar has been fixed is liable to heavy floods, it was considered necessary to raise the platform and renew and extend the old worn-out fencing. Before doing so, the platform was removed on one side and the foundations of the pillar exposed, with a view to examine the possibility of straightening the pillar. It was found on excavating to a depth of 4′ that the pillar-shaft was simply resting on dry stone pitching, joined together by iron dowels, the whole on a substratum of concrete. The weakness of the foundations of this pillar as compared with other ancient pillars, must have been one of the causes of its obliquity. The cracks visible in the upper portion of the shaft were found to extend right to the bottom and any further attempt to expose the foundations or reset the pillar in the perpendicular would have resulted in irreparable damage. It was considered safer to leave the pillar in the same sloping position with the lower part of the shaft imbedded as before in the brick platform. Further work of extending the fencing is expected to be done next year.

The JAṬĀR DEUL or "temple of matted hair" was another monument in Bengal where Rs. 1,515 were spent during the year, mostly in providing iron spikes for access to the top of the spire and thus making it possible to eradicate periodically the luxuriant vegetation growing over it. Its situation in the heart of the Sunderbans country surrounded by thick forest and deep rivers renders it almost inaccessible. The existence of such a temple is in itself a forceful reminder of the days when the Sunderbans were less sparsely peopled

and not entirely given over to natural forces. The temple has considerable architectural merit, its tall brick spire profusely ornamented on the exterior with its own miniatures and other geometric mouldings being one of the few remaining examples of the Indo-Aryan or Nāgara style extant in Bengal. Another example of the same style in Bengal is the Siddheśvara temple at Bahulara in District Bankura, a slight difference manifesting itself in the more curvilinear outline of the spire of the latter. The Bahulara temple has been assigned to as early a date as the 10th century A.D. by Dr. Coomaraswamy,[1] although previous investigators [2] did not take it to be so early in date. It is possible that the earlier date is a century or two too early, but there can be no doubt that these two examples of the brick *Śikhara* type, cannot be far removed in date from their stone prototypes so well known from the Bhuvaneśvara style of architecture, the latest example of which is dated the 12th century A.D.

The PALPARA TEMPLE near CHAKDAH on the left bank of the Bhāgīrathī which was provided with a wire fence during the year at a cost of Rs. 577 is a charming little example of the modern Bengali style of temple architecture, with the curved "bamboo-line" cornice and richly moulded brick façade decoration consisting mostly of floral tracery interspersed with mythological scenes. It lies within a distance of forty miles from Calcutta and was thoroughly repaired seven years ago in accordance with a conservation note drawn up by Mr. Blakiston.

Another temple closer to the metropolis, but on the right bank of the Bhāgīrathī, is the so-called "PAGODA OF HENRY MARTIN" near the Howrah Water Works at SERAMPORE. It is a solid structure consisting originally of a central chamber with verandahs on all sides, the curved cornice roof of the central shrine being higher than the similar verandah roofs. Originally built in the 17th century A.D. to enshrine the locally celebrated image of Rādhāvallabha, it was subsequently abandoned because of the feared encroachment of the river, and the image withdrawn to the present temple at Serampore some time before 1800 A.D. It was then purchased by the Rev. David Brown, who made it over in 1806 to Henry Martin, the well-known missionary. Martin found an appropriate residence in this "cool old Pagoda" and consecrated the place as a Christian oratory. This transformation must have been accompanied by considerable rebuilding, in which most of the features of the Hindu temple seem to have disappeared. The temple-oratory with its whitewashed interior, plastered walls and floors and rounded arches, but with the double Bengali curvilinear roof stands as a vivid memento of the transformations through which it has passed. At a cost of Rs. 638 steel girdles were this year provided for strengthening the masonry of the vaults to prevent the further development of cracks that had made their appearance in various parts of the structure.

If any place more than another would serve to illustrate best what the unceasing consistent policy of conservation of ancient monuments followed by

[1] *History of Indian and Indonesian Art*, Pl. LXIII, p. 108.

[2] *Cf.* Cunningham: *A. S. R.*, Vol. VIII, p. 202.

the Government of India has accomplished during the last twenty-five years, at any rate in Eastern India, that place is GAUR, the ancient capital of Bengal. Well known to European explorers since the early days of the East India company, the ruins have been described and illustrated in half a dozen publications issued during the last hundred years and more; but not until the close of the last century was the hand of Government definitely raised to put a stop to the process of disintegration and decay and to reclaim the ruined mosques and tombs, towers and gates from the luxuriant jungle which had there established a firm hold. The ruins of Gaur mark the site of the biggest city, with the possible exception of modern Calcutta, ever founded in Eastern India. Like its modern successor, it was situated on the eastern bank of the Bhāgīrathī, and being hemmed in between the river on one side and large expanses of marshy land on the other, stretched lengthwise from north to south. Its citadel was situated almost midway between the extremities of the city and the royal palace and inner apartments enclosed by a lofty and imposing masonry wall, which still partially survives, under the name of "*Baisgazi*" or "22-yards wall" and has recently been cleared of all jungle.

There are reasons to believe that the city of Gaur was founded by some Pāla prince long prior to the Muhammadan occupation in the early 13th century. A Sanskrit work called *Rāmacharita*, written by a court poet of King Rāmapāla in the 11th century and describing the exploits of that King, refers to his founding of a new capital named after him as Rāmāvatī. Its situation is described as between the Ganges and Karatoyā rivers. The latter river is now a small straggling stream in the Bogra District, but there are reasons to believe that at one time its lower course coincided with the present bed of the Mahānandā. In that case the site of Rāmāvatī is to be sought for somewhere in the neighbourhood of Gaur. The mention of Rāmāvatī as a Pargana in the Sarkar of Jannatabad (Gaur) in Abul Fazl's *Akbarnama* makes it certain that it was somewhere in the vicinity of Gaur. The city of Rāmāvatī was probably in ruins, when the city of Lakhnauti (originally Lakshmaṇāvatī) raised its head. It is by the latter name that the Muhammadan conquerors knew the place; although Rāmāvatī was not, it appears, altogether forgotten till the times of Akbar, even when its successor had already shared its fate. The tendency of the city seems to have been continually to extend to the south. Thus while ancient Rāmāvatī was to the north of Lakshmaṇāvatī or the early Muhammadan city of Gaur, Firozabad, the southernmost suburb of the city has many important mosques built in the last period of the prosperity of Gaur, prominently among which may be mentioned the Chhota Sona Masjid, which has been termed the gem of Gaur architecture.

Although the city of Gaur must have been growing in prosperity after its conquest by the Muhammadans, no extant monuments can testify to its condition or style of the architecture of the 13th and the first half of the 14th century, when under Sultan Ilias Shah, the rival city of Pandua, some 20 miles to the north-east had become the capital. After its rehabilitation under Nāsir-un-din Muhammad Shah, the city of Gaur attained the zenith of its prosperity

in the latter part of the 15th century A.D. To this period and to the golden age of Hussain Shah and his son Nasrat Shah, roughly the first quarter of the 16th century A.D. are attributable the most important monuments. The inner citadel with its existing gateways, the Dakhil Darwaza on the north and the newly-repaired Gumti gateway on the east must be ascribed to the 15th century. The exuberance of variegated encaustic tile work with which the façades and wall mouldings of buildings of this period such as the Lattan mosque and the Gumti gateway were decorated constitutes one of its principal features. The clearance of the area between the Chika mosque and Gumti gateway has this year disclosed the existence of a floor of painted tiles of hexagonal pattern and a mosque with half-damaged stone pillars, marking the position of the bays. This area was examined with a view to determine the nature of the underground stone cells visible at a short distance to the east. As the digging proceeded it was clear that there were at least three cells (most probably intended to be used as graves) almost 4′ deep, with a terraced floor and walls of dressed stone, their openings being closed by rough-hewn slabs of stone placed breadthwise from east to west. As traces of inhumation were discovered in two of the graves the work was immediately stopped and the graves filled in. It is probable that the mosque just to the west was built with the tombs some time about the 15th century A.D. The so-called Chika mosque further west is in all probability a tomb where Nāsiruddin Muhammad himself and his immediate successors were buried [1] and it is not improbable that other less important people connected with the royal family were interred in close proximity to the royal tomb. The Gumti gateway and the area around must have fallen into disuse and been overtaken by complete ruin in the last quarter of the 16th century when the city of Gaur was devastated; for in the attempt made by the ill-fated Shah Suja, half a century later to restore the fortunes of the city, a new gate was built within a short distance to the north, now known as the Lukachuri gate.

A proposal is under consideration for housing the relics of Gaur now in the Collector's godown at Malda in the Gumti gateway, which should add to the interest of this historic place.

An important monument in Eastern Bengal where an expenditure of Rs. 3,780 on special repairs was recorded during the year is the MOSQUE OF BABA ADAM or Adam Shahid at KAZI KASBA in the village of RAMPAL in the Dacca District. From an inscription preserved in its front wall, the mosque was built by Malik Kafur in the year 888 A.H. (1483 A.D.) in the reign of Jalaluddin Fateh Shah, Sultan of Bengal, although the saint in whose name it was erected and part of whose remains are enshrined in the adjoining tomb is supposed to have lived some time in the 12th century A.D. The story goes that the aid of this renowned saint of Arabia was sought by some oppressed Muhammadan subject of King Ballālasena of Rampal and in the struggle that ensued, both the saint and the king lost their lives. Whatever the historical

[1] Cunningham: *A. S. R.*, Vol. XV, p. 56.

truth underlying the tradition, it seems clear that Baba Adam must have been one of the earliest pioneers of Islam in the Vikrampur area, the most important stronghold of Hindu and Buddhist influences in Eastern Bengal in the times immediately preceding the Muhammadan invasion.

The mosque is a typical specimen of the early Pathan style of architecture in Bengal. It has two octagonal pillars apparently of Hindu origin, supporting the springs of arches of six domes. The front façade shows the typical curved cornice, being probably the earliest known example of this style in a Muhammadan building. The three *mihrabs* in the western wall were ornamented with beautiful moulded brickwork. The building seems to have suffered much by natural decay and from the invasions of pirates from the Arracan coast, the latter being probably responsible for the denudation of the stone capitals of the pilasters in the walls. Conservation included the rebuilding of an entire row of domes and strengthening the others, rebuilding all spalled and disintegrated brickwork in the interior walls and arches of the façades, underpinning the foundations of the exterior walls, reconstruction of the cornice in accordance with the old construction and the waterproofing of the roof.

Expenditure on conservation in ASSAM amounted during the year under report to Rs. 11,210 of which Rs. 3,544 related to special repairs to 10 monuments and the balance was spent on annual repairs and maintenance charges.

About the oldest remains preserved in the Brahmaputra valley are the ruins near the town of TEZPUR, the headquarters of the Darrang District. These are the remains of a shrine of the Gupta period, consisting of a doorframe and other architectural fragments, at the village of DAH PARBATIYA, 2 miles to the west of Tezpur. The temple ruins on the north bank of the Brahmaputra, 2 miles east of Tezpur, known as BAMUNI TEMPLES where Rs. 1,471 were spent, are later in date, going back to the rulers of the Harjara dynasty in the 9th-11th centuries. They are an imposing jungle-clad mass of displaced stones belonging to a group of temples, of which the mere outline of the foundations has now been laid bare. The architectural fragments, such as pillars, lintels, door-jambs, pediments, cornices, etc., have been arranged close to the plinths of the shrines and also along the winding pathway leading to the temple from the foot of the hill. Among the remains discovered this year, special mention must be made of two large stones with the 'lion on elephant motif,' now kept on the plinth of the shrine and a fragment of the back slab of a fine black basalt image showing a lion attacking an elephant with a rider on its back. The latter piece (now preserved in the Kāmrūp Anusandhān Samiti's Museum at Gauhati) bears affinities to the work of the Late Pāla period in Bengal, while the former must be regarded as a product of the local school.

The conservation programme in Assam includes the maintenance of an important class of monuments associated with races in different stages of culture who contribute not a little to the interest of the province forming the North-East Frontier of the Indian Empire. Thus, while huge monolithic stone memorials of the Khāsi people, known as U Mawthoh Dur and U Mawtho Dur

Briew are maintained in the Khāsi Hills, pillars of diverse shapes and designs and other memorial stones in old settlements of the Kachari and Nāgā races, such as Dimapur and Kasomari Pathar, have been preserved in the tract bordering on the Kachari and Nāgā Hills, in the centre of the Assam valley. This year, an addition to this group has to be recorded in the shape of some three memorial stones at HORUPANI, fourteen miles in the jungles from Jamuguri. The first stone known to the Lhota Nāgās as "the King of Assam's hand basin" is, as its name implies, a single block of stone about 3′-6″ in diameter carved into a trough ending in a spout, the rim of the cavity being used by the Nāgās for sharpening their *daos*. The inside of the basin is carved with a floral design. Another oblong stone is carved into an open wedge-shaped trough and a third is an upright slab with a rudely carved hollow at the bottom. Dr. Hutton, Deputy Commissioner, Nāgā Hills, and Honorary Director of Ethnography in Assam, at whose suggestion these monuments have been protected, would connect all these relics with the present day ceremonial observances of the Nāgā tribes, who in his opinion must have once boasted a higher civilization, until they were driven into the hills. Provision for erecting a wire fence and clearing jungle around these memorial stones at Horupani was made during the year at an expenditure of Rs. 99.

MADRAS PRESIDENCY AND COORG.

By Mr. A. H. Longhurst.

A grant of Rs. 26,609 was sanctioned for the conservation of ancient monuments in the Madras Presidency and a total sum of Rs. 24,512-6 expended. At HAMPI, the ancient capital of the Vijayanagar Kings, Rs. 5,303 were spent on annual repairs and the maintenance of roads and watchmen. The roads throughout this vast site are now in good order and the visitor is able to motor to all of the chief buildings, consisting of temples, palaces, durbar halls, pavilions, gateways and picturesque fortifications. Repairs were carried out to the famous Vitthala, Krishna Achyutaraya and Pattabhirama temples and also to the group of buildings in the Zenana Enclosure. Since the institution of a motor bus service between Hospet station and the Hampi ruins the number of visitors to the latter place has greatly increased.

At MAHABALIPURAM, popularly known as the "Seven Pagodas", the sea coast town of the ancient Pallava dynasty and famous for its wonderful group of rock-cut monuments and sculptures, special attention is being given to the upkeep of the roads and planting of trees so as to form shady avenues to the chief monuments. Last year, owing to want of rain at Mahabalipuram a number of young trees perished and these have been replaced this year by new plants which will require constant attention for the next three years or more. The monuments being mainly rock-cut structures, their conservation is a simple matter, but the famous Shore Temple, one of the few structural buildings there, is situated within a few feet of the sea. The whole of its front plinth had become undermined by the sea's action and has had to be grouted and pointed

with cement to prevent further decay. This work has been completed and the temple is no longer in danger of being destroyed. In the same district annual repairs were carried out to the Dutch forts and cemeteries at SADRAS and PULICAT respectively. In the Kistna district, a sum of Rs. 742 was spent on repairing cyclone damages to the Fort, Belfry, Powder Magazine and Dutch cemetery at MASULIPATAM; and petty repairs were effected to the Buddhist remains at GUNTAPALLE, JAGGAYYAPETA, GHANTASALA, AMARAVATI, SANKARAM and RAMATIRTHAM. A total sum of Rs. 761 was spent on repairs and maintenance of watchmen at GOOTY fort in the Anantapur district and annual re pairs were carried out to the historical FORTS at GURRAMKONDA, SIDDHOUT, RAYAKOTAI, KRISHNAGIRI, SANKARIDRUG, ATUR, NAMAKAL, VELLORE, ARCOT, DINDIGUL and ANJENGO. The repairs to these consisted mainly in the removal of rank vegetation, reconstructing fallen portions of the ramparts and bastions, patch plaster work and the maintenance of watchmen, roads and paths. A sum of Rs. 1,805 was sanctioned for special repairs to three ruined Hindu temples at DANAYAKANKOTTAI in the Coimbatore District. The inscriptions in these temples are of considerable historic interest and show that Danayakankottai was an important town in the 14th Century A.D. Nothing now remains of the city, the whole site being overgrown with jungle. The conservation of these temples has been a somewhat difficult matter owing to want of labour in this locality and also to the fact that building materials have to be transported a considerable distance over bad roads. The temples have however now been saved from further decay. The remaining items of expenditure relate to the usual annual repairs effected to a large number of protected monuments throughout the Presidency all of which are being maintained in a good state of preservation.

In the Province of Coorg a sum of Rs. 920 was sanctioned out of which Rs. 737 were spent. The work consisted of special repairs to the rampart walls of the FORT at MERCARA and three JAIN TEMPLES at MALLUR, including cement plastering, pointing with surkhi mortar, removing trees, removal of roots from the walls as well as annual repairs to the roads, culverts and drains inside the fort and approaches and repairs to masonry elephants, fences and wells.

BURMA.

By Mons. Charles Duroiselle.

The people of PAGAN, headed by some Buddhist monks, have recently shewn a desire to repair and embellish certain old temples and pagodas at Pagan which have fallen into a state of disrepair. U Wilatha, the abbot of the Ananda monastery and U Kawthanla, of the Tangyi-taung monastery, Pagan, have undertaken to repair, with the help of public subscription, the ATWINZIGON PAGODA which tradition attributes to Kunzaw Gyaungbyu, king of Pagan (1001-1921 A.D.).

The Atwin-Zigon, so called owing to its being situated within the walls of the city of Pagan and to distinguish it from the one without, the well-known Shwe-Zigon of Nyaung-U, whose erection was begun by Anawrata (1044-1107 A.D.) and completed by his successor Kyanzittha (1084-1112 A.D.), is a stūpa of conical type built on a raised platform. It is not a protected monument, but its antiquity is attested by local popular tradition and by a shrine dedicated to two guardian spirits erected on its western platform. The latter is a feature noticeable only among the oldest monuments at Pagan, and seems to be a vestige of the spirit worship of Burma in pre-Buddhistic days.. The *Hti* has, for some time, been leaning dangerously to one side, with the result that some damage has been done to the *āmalaka* and to a portion of the *śikhara* beneath; and the dome and the terraces shew signs of deterioration in not a few places. It is gratifying to note that the above mentioned monks have taken in hand such an urgent and useful work. A pleasing feature of this undertaking is the readiness displayed especially by U Wilatha, to accept the advice and guidance of the Archæological Superintendent, in repairs of this nature.

U Thathana, another Buddhist monk, abbot of the Sulamani monastery, Pagan, repaired, also with the help of public subscription, some of the brick and plaster images of the Buddha inside the SULAMANI TEMPLE, which were in a very bad state of preservation. These images were not the original statues which had deteriorated not only owing to the action of time, but as a result of the vandalism of treasure-hunters, and they had been repaired from time to time by pious devotees mostly at the instance of the monks living near by.

A new copper *Hti* was put up on the LOKĀNANDA PAGODA by another monk in place of the old one, which was not only showing serious signs of decay but considered too small in proportion to the size of the stūpa.

U Khema, a monk of Myinpagan, and others have been collecting funds for the installation of electric lights on the Lokānanda pagoda and Mahābodhi temple. It is expected that the work will be finished in the near future.

The SULAMANI, LOKĀNANDA and MAHĀBODHI are protected monuments, maintained by the Central Government. The monks mentioned in the foregoing paragraphs obtained the necessary permission of the Archæological Department before undertaking the aforesaid works and detailed instructions were given them in each case as to the locating of the dynamo and the laying of the wires.

The advent of motor vehicles has awakened the old capital from its secular slumber, and the construction of a metalled road from Nyaung-U (the landing place for mail steamers) to Pagan, about five miles, has brought about an astonishing increase in the use of these vehicles; so that now the exasperatingly slow-going bullock carts have given way to motor-lorries, motor-buses and taxis, resulting in a considerable increase in the number of pilgrims and others visiting the monuments at Pagan. In the dry weather, these vehicles may be seen in every nook and corner, and wherever there is a road wide enough to allow them to pass. It is to be hoped they may prove a means of attracting to this old site visitors other than Burmese.

The conservation work undertaken by this Department may be divided into two heads, (1) Special repairs and (2) Annual repairs. The former consisted in the continuation of special repairs to the DHAMMAYAZIKA PAGODA at a cost of Rs. 5,495, and of the construction of the garden on the Palace platform and special repairs to the *pyatthats* on the Fort walls at MANDALAY, at a cost of Rs. 2,066 and Rs. 4,439 respectively; special repairs to the KYAUKKU ONHMIN TEMPLE at PAGAN at a cost of Rs. 1,630; providing an enclosure wall round the PEBINGYAUNG PAGODA, PAGAN, at a cost of Rs. 273 and the construction of a shed for preserving antiquities at MROHAUNG in the Akyab District at a cost of Rs. 1,262, the sum spent for special repairs totalling Rs. 18,653 in all.

It was expected that the repairs to the DHAMMAYAZIKA would be completed during the year under report, and a sum of Rs. 8,600 was originally set apart for the purpose, a separate allotment being made for agency charges. But owing to lack of funds for work of a more urgent nature elsewhere, a sum of Rs. 3,000 had to be re-appropriated from the amount originally allotted; with the remaining sum, the Public Works Department Officer in charge succeeded in completing the repairs to the inner enclosure wall and the pavement, the repairs to the main building and subsidiary temples having been completed last year. Repairs to the outer enclosure wall have also been taken in hand, and it is anticipated that the entire work of conserving the Dhammayazika will be entirely completed in the course of the next official year, thus giving to this beautiful and unique monument another long lease of life.

A sum of Rs. 1,630 was spent on restoring the damage done by abnormal heavy rains in the year 1926 to the KYAUKKU ONHMIN. This temple is a fine specimen of cut stone masonry and brick work; it is situated on the slope of a deep valley, and its plinth-level is about forty feet below the level of the surrounding country. It is built up in four receding tiers, and the roof of the uppermost tier—a flat terrace of lime concrete—is on a level with the adjoining country; the earth adjoining the building on either side of the slope is reinforced by brick retaining walls. During the heavy rains in 1926, water percolated through the lime concrete in the roof and caused the collapse of a portion of the wall on the north-west side. The *débris* fell on to the terrace below and carried along with it a portion of the wall on to the roof of the storey underneath. The repairs consisted in rebuilding the fallen walls with old Burmese bricks in lime mortar and renewing the cracked concrete roof above. Provision was also made for draining off the rain water that might collect at the back of the temple.

The PEBINGYAUNG is situated in the PAGAN village, with houses on both sides; its enclosure wall had disappeared. In order to protect it against the depredations of boys and animals and to keep it clean, a brick wall provided with a small wooden gate was built around it at a cost of Rs. 273, on the model of those existing around the neighbouring monuments. The new walls are 2′ 9″ high and 18″ thick and were built of brick and mud mortar, the upper layer being set in lime.

At MROHAUNG in the Akyab District a wooden shed has been built at a cost of Rs. 1,262 for housing the antiquities found in that District. Since my first visit to ARAKAN in December 1920, there have been collected a goodly number of antiquarian objects. Among them may be mentioned a figure of Sūrya with an inscription on the back belonging to about the 8th century A.D., a miniature stūpa of the same period and a fragment of a stone sculpture representing Durgā in the act of killing the "Buffalo" demon, also of an early date. These and many others among which may be included lithic inscriptions belonging to the 15th-16th century, had to be deposited, for want of a suitable place wherein to preserve them, at Vesali, a village about 8 miles from Mrohaung in charge of the village headman there, and of the elders of various villages, at the sites where they had been discovered, and in the Public Works Department bungalow at Mrohaung. To remedy this unsatisfactory state of affairs, an open wooden shed, measuring 32′ × 16′ with corrugated iron roof and a wooden railing, was built for their accommodation on the Palace platform at Mrohaung where remains of the old fort walls, stūpas and temples belonging to the last dynasty of Arakanese kings (1433-1785), may also be seen. At some future period, when a larger number of antiquities have been collected, this temporary shed may be replaced by a more durable and appropriate building.

The principal items of work at MANDALAY were repairs to the *Pyatthats* on the Fort walls and to the buildings on the Palace platform. There were originally 48 *Pyatthats* on those walls, of which 45 now remain, three having collapsed; two in the gale of 1926 and one previously. The repairs consisted in renewing the ½″ double teak board roofing, missing carvings, and the tongued and grooved wallings of the *lê*, that is, the space between two superposed roofs of 8 *pyatthats*, at a total cost of Rs. 8,940. A sum of Rs. 5,983 was spent on repairing carvings, roofs, floors and walls of some of the buildings on the Palace platform, and in laying Pakhangyi stone flags, and spreading Mandalay Hill gravel in the alleys.

The usual annual repairs were carried out to the monuments at PAGAN, AVA, SAGAING, MINGUN, SHWEBO, AMARAPURA, KYAUKSE, PEGU, SYRIAM and HMAWZA. Altogether Rs. 34,545 were spent on these. Out of this amount, a sum of Rs. 2,995 was expended in reconstructing the cracked and bulging walls round the platform on the river side and in stone-pitching the slope of the LOKĀNANDA PAGODA.

A sum of Rs. 984 was spent on the BUPAYA PAGODA and Rs. 733 on the MIMALAUNG KYAUNG. The Bupaya is, like the Lokānanda, situated on the river bank on a piece of land jutting out into the river. The side facing the river is very steep and a stone retaining wall had been built here as a protection against erosion during the annual floods. In the course of inspection during last cold weather, ugly cracks were noticed in that retaining wall near the base at many places; and the stone pitching underneath had become loose and displaced. This was a grave danger to the stability of the building. The cracks have now been filled up and the stone pitching repaired.

The MIMALAUNG KYAUNG is a small temple consisting merely of an image chamber, and square in plan. It was built on a raised platform of earth kept together by four retaining walls. The platform is floored with concrete. Some damage was done to the platform on the north owing to a settlement of the retaining wall on that side, during the year under report. To prevent further damage to the platform and a total collapse of the retaining wall, the latter was strengthened by buttresses, and the platform picked up and relaid.

RAJPUTANA AND CENTRAL INDIA.

By Mr. H. H. Khan.

During the year under report conservation works have been carried out at AJMER and PATAN in the Jhalawar State of Rajputana, and at KHAJURAHO in the Chhatarpur State and MANDU in the Dhar State, Central India. Besides these the Bhopal, Udaipur, Bikaner, Bharatpur, Jaipur, Jodhpur, Kotah and Sirohi Darbars also report having carried out certain works of conservation in their respective States during the year.

In the British District of AJMER, four monuments, the MAGAZINE FORT BUILDING, DELHI GATE, TRIPOLIA GATE and JAHANGIRI MAHAL at PUSHKAR were removed from the list of protected monuments, as three of them are occupied by offices of the local Administration and one is in a very advanced stage of dilapidation. Of the eleven monuments maintained on the list of protected monuments eight were properly conserved and maintained at a cost of Rs. 5,982-8-0. These are the ARHAI-DIN-KA-JHONPRA, the TOMBS OF ABDULLA KHAN and his wife, the BADSHAHI BUILDING, the MARBLE BARADARIS on the Anasagar Bund, the TARAGARH GATE, the SOLA KHAMBA MOSQUE, the MARBLE FOUNTAIN TANK in Daulat Bagh and EIGHT KOS MINARS.

At AJMER besides the usual annual repairs and maintenance of the Archæological buildings a commemorative marble tablet was put on the north side of the Gateway of the Magazine Fort to mark the spot where SIR THOMAS ROE, the first British Ambassador, from the court of James I of England was called in audience by the Moghul Emperor Jahangir during his stay in Ajmer in 1616.

For the interest and information of the readers who may never chance to visit the monuments the inscription is reproduced below:—

"In the balcony overhead Sir Thomas Roe the accredited Ambassador of King James the First of England was given the first official audience by the Moghul Emperor Nur-ud-din Muhammad Jahangir Padshah Ghazi on January 10th 1616 A.D."

The MAGAZINE FORT BUILDING, in which the Rajputana Museum is situated, was conserved by the Archæological Department at considerable cost. It is still occupied by the offices of the Provincial Government, but it is hoped that the Local Administration may realise its historic importance and take necessary steps to vacate the monument and make it over to the Archæological Department. Special repairs undertaken at Ajmer were, improvement to

the SOLA KHAMBA MOSQUE by exposing its buried marble plinth, the removal of the débris from the *chabutra* behind the east side of the south wall of ARHAI-DIN-KA-JHONPRA, and the repair of the *chunam* floor of the terrace of the ANASAGAR BUND.

A number of carved fragments and sculptures belonging to old temples were recovered from the vicinity of ARHAI-DIN-KA-JHONPRA, and these will in due course be removed to the Ajmer Museum.

The MARBLE BARADARIS on the Anasagar Bund continually show cracks, notwithstanding the special repairs executed from time to time in the last few years. The Baradaris are bounded on one side by the lake and on the other by a garden full of huge trees, and these cracks appear to be due to several causes, natural subsidence near the edge of the lake and displacement due to the roots of the adjacent large trees.

The plans and drawings of the ancient monuments in Ajmer, now available in the records of the local Public Works Department have been found to be wanting in those details which alone will make them useful for Archæological purposes. A sum of Rs. 600 was accordingly sanctioned by the Central Government to initiate a survey of all protected monuments during the year under report. As, however, no suitable draftsman could be found, the proposed survey could not be started, but it is expected that the services of a competent architectural draftsman will be available shortly for this work.

During the year under report the Jhalawar Darbar undertook the work of conserving the five CHANDRAVATI TEMPLES at PATAN. The greater part of the repairs has been finished and the Jhalawar State has had the advantage of a grant-in-aid of Rs. 2,000 from the Central Government to meet the cost of these repairs. Of this sum Rs. 1,660 have been already expended. During the course of conservation of these five temples a number of interesting images were recovered from the vicinity and removed to the Jhalawar State Museum, which, however, is now overcrowded and urgently calls for an early extension of its premises.

At CHITOR the Mewar Darbar have carried out some repairs to the JAYA STAMBHA or the Tower of Victory and to the TEMPLE OF MOKALJI, and an expenditure of Rs. 1,226 out of Rs. 8,000 provided for the former and Rs. 694 out of Rs. 5,000 for the latter, has been reported.

The Director General of Archæology in India on his visit to Chitor on March 3rd 1927 was greatly disappointed by the repairs in progress at the various monuments, particularly the Jaya Stambha, some of the original bas-reliefs of which had been restored in a manner entirely in conflict with archæological needs. The tower is one of the most important historical monuments in India. It is about one hundred and twenty feet high and most elaborately decorated from top to bottom, inside and outside, with innumerable images of various kinds providing valuable materials for the history of Hindu mythology and art. The tower as it now stands is in a most perilous condition, and until its stability is ensured no repair of any kind (and particularly such as those now being undertaken) is advisable. A memorandum by the Director

General of Archæology in India has been forwarded to the Mewar Darbar, dealing with the conservation and repair of this important monument.

During the year under report conservation works were in progress at KHAJURAHO in the Chhatarpur State and at MANDU in the Dhar State. In the Khajuraho group of monuments the CHITRAGUPTA, the GANGAJI and the DEVI JAGDAMBA TEMPLES received particular attention and are now in good repair. The protection of these monuments has been further ensured by notice boards, warning the public against any damage to the buildings. About one hundred and fifty-seven images were collected during the course of conservation from the surrounding jungles and placed in the Khajuraho Museum.

The conservation work of the temples at Khajuraho is almost complete and little remains to be done, save the cleaning of elaborately decorated surfaces, the restoration of some of the topmost finials of the *Śikharas* and the preparation of plans for a proper lay-out of the sites.

The total cost for the year on these repairs, etc., and the preparation of the Khajuraho Guide by Mr. B. L. Dhama, amounted to Rs. 3,975 of which Rs. 3,422 were spent by the Darbar and Rs. 546 out of the balance of the grant-in-aid of Rs. 1,000 made by the Government of India in 1926.

DONI in the Chhatarpur State is said to have been founded by Droṇāchārya, the teacher of the military art to both the Kaurava and Paṇḍava princes. On the embankment of the Dronasagar lake at Doni exist three granite-built Chandela temples of the 10th century A.D., known as Nandimath, Surajmath and Mahadeva Mandir. For this group of temples, the Darbar prepared estimates according to the Conservation Notes of Mr. B. L. Dhama, dated 31st August 1925, which received the approval of the Archæological Department. Necessary conservation was taken in hand, but the work could not be completed in the year under review.

At MANDU in the Dhar State repairs to the NILKANTH, TARAPUR GATE, SONGARH GATE and HOSHANG'S TOMB have been completed, while those of the JAHAZ MAHAL, HINDOLA MAHAL and CHAMPA BAOLI are in progress.

At the Nilkanth the open court of the north front has been paved with red stone slabs and the terrace of the same court has been supported by a large retaining wall. Better residential quarters for the priest. pūjā ... of the Nilkanth shrine being urgently needed, a hut has been ... however ... built for him on the site of the old one. The task of water-proofing ... een ... the top of the pylon and the FORT WALLS at the TARAPUR GATE has ... been finished and thorough repairs have been executed to the battlements ... of the SONGARH GATE bastion. Most of the missing marble lintels that ... support the *chhajja* of the HOSHANG'S TOMB, have been replaced and the crac... been grouted with cement. T... in the south-west corner of the tomb have exposing the old floor and ... débris from the compound has been removed of the place. The work of ... has greatly improved the general appearance is in progress. The crack... repairing the conspicuous graves in the compound from the TARAPUR GATE w... in the dome of the mosque which stands not far ... ere grouted with cement and the euges of the broken

pilaster repaired with a fillet of cement. Débris has also been removed from the DAIKA MAHAL, DAIKA-KI-CHOTI-BAHENKA-MAHAL, DARYA KHAN'S TOMB, MAHMUD'S TOMB, ANDHERI BAOLI, TAVELI MAHAL, ASHRAFI MAHAL, HINDOLA MAHAL and CHAMPA BAOLI. In addition to the maintenance of the protected monuments, jungle has been cleared on an extensive scale from the ruins in and around the HINDOLA MAHAL, the PALACE SQUARE, the NAHER ZARUKA PALACE, the MUNJ TANK and the ROZA MAHAL. Out of the total expenditure incurred for the purpose during the year a sum of Rs. 5,000 was contributed as a grant-in-aid by the Government of India.

The survey of ancient monuments at Mandu was also sanctioned by the Government of India and a sum of Rs. 2,000 was provided for it during the year. The work was taken in hand in due time but the progress so far achieved is not appreciable for the reason that one of the two draftsmen employed for the purpose resigned his appointment.

It is a source of continued satisfaction that the monuments at SĀÑCHĪ in the Bhopal State, so ably conserved and restored by Sir John Marshall, continue to receive the most careful attention of the State authorities. Jungle clearance and improvement of pathways in places have been carried out and the provision of a Waiting Room at the Sāñchī Railway Station by the Great Indian Peninsula Railway Company is a welcome amenity greatly appreciated by the large number of visitors to this famous Buddhist site. The want of a waiting room deterred many who would otherwise have visited Sāñchī and the G. I. P. Railway authorities are to be congratulated for meeting this need.

SECTION II.—EXPLORATION AND RESEARCH.

EXCAVATIONS AT TAXILA.

By Sir John Marshall.

1. Giri.

A little over two miles east-south-east of the great Dharmarājikā Stūpa and nestling into the hillside at the foot of the Margalla spur, are two villages known respectively as Khurram Pracha and Khurram Gujar. Between them a rocky defile through the hills leads to a small secluded valley and thence by way of a rough torrent bed to the glen of Giri, where there is a perennial spring of excellent water and, near by, a Ziārat (Pl. XV). Above this glen the hills of the Margalla spur rise some 1,500 feet on the south, but not more than 400 to 500 feet on the other sides. Such a spot, shut off from the world, protected from the winds and provided with an ample supply of running water, must have been irresistibly attractive to the Buddhists, and it was no surprise to me, therefore, to find there the ruins of two considerable groups of their stūpas and monasteries—one on a terrace immediately above the spring, the other on the lower ground a couple of furlongs to the west. These Buddhist settlements, however, are not the only remains that invest this spot with interest. On the south side of the valley and between it and the glen of Giri is a rocky hill over 500 yards in length from east to west by half as much from north to south, which is detached from the main spur by a steeply scarped *nala* on the west, a more open depression on the south and a shallow saddle on the east, while on the north are steep bluffs alternating with more gently-sloping bays. This naturally strong position was further strengthened in old days by a bastioned wall, of which a considerable section, some 550 yards in length, can still be seen in a ruined condition at its eastern end, while other short sections are traceable here and there over the western half of the hill-top. Along the south side the wall is between 10 and 11 feet in thickness and faced with a late type of semi-ashlar masonry. Not far from the S.-E. corner is a narrow gateway. The bastions, which are round in contour, are placed at regular intervals along the curtain of the wall, and also at the salient and re-entrant angles. In front of the curtain is a plinth intended probably to protect the base of the wall against undermining. Of the fortifications on the opposite hill to the south only a short section is now traceable. They are clearly defined at the point where they cross the *nala* and for a space of about 180 feet beyond, whence they turn eastward around the shoulder of the hill, but from there onwards their alignment is uncertain. One thing, however, is clear, namely, that they must have embraced within their circuit the all important spring [illegible] water higher up the *nala* towards the west, and it is not unlikely that they [illegible] took in the monastery area A—B. Inside these fortifications the hill-top is rugged and uneven to a degree and for the most part so denuded of earth that it is

improbable that excavations would throw any appreciable light on the history of the place. The remains of dwellings and other structures are everywhere in evidence, but potsherds and the like are not in such quantities as might be expected if this stronghold had been in occupation for any length of time. For these reasons, coupled with the remoteness of the spot, I infer that the stronghold was intended as a place of refuge in times of need, and I surmise further that it was built especially for the protection of the large bodies of Buddhist monks living at the Dharmarājikā and neighbouring monasteries. In the Khurram valley alone more than a score of these monasteries are still traceable on mounds round about the Dharmarājikā Stūpa or further to the east; and there were many more on the ridges to the north and south. Indeed it is quite likely that the Giri stronghold would be used also by refugees from the many monasteries on the further slope of the Hathial spur, including Jaulian, Mohra Moradu and Bajran, who on the occasion of hostile invasions might easily have found themselves cut off from the city of Sirsukh. In the fifth century A.D., from which this stronghold appears to date, the whole body of monks in the environs of Taxila must have run into many thousands, and even assuming that they could have taken refuge inside the city, they may have had strong reasons for preferring to defend themselves in a fastness such as that of Giri, which might well escape the full force of the invasion and from which in any case they could on occasion beat a retreat into the higher hills of the Murree range. Towards the close of the fifth century the Buddhists especially must have been hard put to it to escape the fury of the White Huns, who were then over-running the North-West of India, and I regard this stronghold of Giri as affording most interesting evidence of the imminent dangers to which they were then exposed.

Monastery A—B.

To return, however, to the two groups of monastic buildings at Giri (Pl. XVI, *a* and *b*). The larger of the two (A—B) which, as stated above, stands on a projecting terrace just above the spring, covers an area of 120 yards from North to South by 60 yards from East to West. To the north is a large stūpa; to the south, a monastery with some 20 apartments on the ground floor; and in the space between them a complex of walls which have only been partially excavated but which may be assumed to have belonged to a chapel court. The stūpa, which measures 62 feet square and rises to a height of about 15 feet, is in a very dilapidated condition. Its core, as usual, is of heavy rubble and its facing of *kanjur* stone finished off in plaster, the paving of the lowest tier being of local limestone slabs. All that is now left of the basement consists of a low plinth relieved by a line of dwarf Corinthian pilasters and a higher tier above it, which is also divided into panels by a series of pilasters set on a heavily moulded base. The plinth, which is no more than 1′ 6″ in height, is disproportionately small for so imposing an edifice. From the fact that no fragments of stucco reliefs were found in the débris round the stūpa, it may be inferred that its walls were devoid of figures in relief.

The monastery B, which is somewhat exceptionally well preserved, especially on its southern side, is of semi-ashlar masonry of a decadent type, and so far as the main court is concerned, planned on the usual lines. Ranged about the four sides of this court are 18 cells, some of which are provided with wall niches; in the middle of the northern side is an entrance vestibule, and in the southern a passage leading to what are presumably the kitchen and dining rooms as well as to the stairs by which the upper floor was reached. The disposition of this part of the monastery is unusual and interesting. In other contemporary monasteries, like those of Jaulian and Mohra-Moradu, there was, in addition to the court of the cells, a Hall of Assembly, a kitchen (generally with a scullery and store-room attached) and a Refectory. Now, in planning this monastery at Giri difficulties were experienced owing to the constricted area and uneven character of the rocky ground. Thus, at the back of the three cells numbered 10, 11 and 12 on the plan, where the Hall of Assembly ought naturally to have been placed, there is an outcrop of rock which it would have taken immense labour to remove. To get over the difficulty, this outcrop appears to have been levelled up to the height of the first floor and the Hall of Assembly built on its top at the level of the first floor; and in order to provide direct access to this hall as well as to the upper storey cells, a stairway was constructed on the east side of the passage alluded to above. This at any rate seems to me the obvious explanation of the levelling that has been done to the outcrop and of the other exceptional features of the plan, though in the absence of any actual remains of the Assembly Hall, my explanation is not to be regarded as conclusive. The passage itself was roofed by means of a corbelled vault, two courses of which are still in place, and received light and air through a window at the southern end. In its west side is a doorway with its corbelled arch intact, through which the group of rooms comprising the kitchen and Refectory were reached. The room which I take to have been the Refectory, is unduly small, but would have sufficed to seat between 20 and 30 monks. The other two rooms resemble ordinary cells rather than a kitchen and scullery. Their position, however, is where we should naturally expect the kitchen to be, and I incline to think that despite their size this must have been their purpose. The passage on the north of No. 19 leads to a small side entrance like the one in the kitchen quarters of the monastery at Jaulian, the stone jambs of which are still partially preserved.

Of the complex of structures between the stūpa court and the monastery the plan has yet to be determined; up to the present only a small section has been cleared. Meanwhile, however, it may be remarked that the building M stands on the lower level of the stūpa court, with a terrace over 6 feet high abutting against its outer face on the East and South; and the windows, therefore, in the outer wall of the narrow passage K. K. had to be placed high enough to be above the level of this terrace. For the moment it looks as if this passage may have been a *pradakshiṇa*, somewhat similar to that in the Apsidal Temple in Sirkap. The semi-circular buttress which half obstructs it at the S. E. corner, has evidently been added at a later date, to save the inner

wall from collapse. Let me add, also, that the two walls N. N., which are buried beneath the level of the higher terrace on the east, appear to have belonged to an earlier structure which had fallen to ruin and been partially dismantled before the terrace was constructed. The minor objects recovered from this group of buildings comprised iron nails, fish-plates, hinges, clamps, arrow-heads, needles, a sickle, copper rings, handles of bells, antimony rods, glass and ivory bangles and stone beads and coins. The coins, however, from this site are few, numbering only 26 and of these nine only can be identified with certainty.

MONASTERY C, D, E.

The other monastic settlement (C, D, E) is set on a raised terrace at the western end of the glen, with the hillside sloping steeply down to it on the west and a torrent bed skirting it on the south and east (Plates XVI, *b*, XVII, *a* and *b* and XVIII, *a*)—a position that has proved anything but favourable to the preservation of the buildings; for the torrent has shorn away a large part of the eastern side of the site, and floods sweeping down the hillside have cut across the stūpa court.

Unlike the larger monastery described above, this one is constructed largely of small and large diaper masonry of the Early Kushān period, but has undergone extensive reconstruction in semi-ashlar masonry of a late type. Of the main stūpa which stands on the northern side of the monastery, less than a quarter is now standing, the other three quarters having been washed away by floods. From the little that remains, however, it is evident that its plinth was a square of about 60 feet each way with an ascending flight of steps in the middle of the northern side. Each face is relieved by a line of Corinthian pilasters standing on a moulded base and finished with plaster reliefs. The pilasters, cornice and base are of *kanjur* stone, the panels between of limestone diaper masonry repaired in semi-ashlar, and the core of rubble. A large number of the plaster reliefs, in more or less broken and fragmentary condition, were found lying at the foot of the stūpa on its western side. In style, they approximate to the later sculptures from Jaulian and Mohra Moradu and evidently belong to the period of the later reconstruction. Among them was a colossal head of a Buddha image which lay between the subsidiary structures 2 and 3 on the west side; and a colossal hand, possibly belonging to the same image, which was only a few feet away in front of the third panel from the north-west corner. A third figure, when first excavated, looked like some caricature; for the head of a life-size image, which adorned the drum of the stūpa, had slipped into an almost natural position on the body of a much smaller one, and gave it a singularly grotesque appearance. Other examples of sculptures belonging to this monument are figured in Plate XIX, figs. 3, 4 and 5. Of these fig. 3 (ht. $3\frac{1}{2}''$) exhibits traces of yellow paint on the face and of red paint on eye-brows, eyes and moustache; fig. 4 (ht. $7\frac{7}{8}''$) shows traces of black paint on eye-brows and red on lips; the height of fig. 5 is 9″.

Parallel with the west and north sides of the main stūpa, at the north-west corner, is a row of subsidiary structures numbered from 1 to 8 in the

plan. Of these Nos. 1, 3, 5, 6, 7 and 8 are small votive stūpas of the customary type resembling those at Jaulian and like them, decorated with tiers of lions and Atlantes, or of Corinthian pilasters alternating with niches, in which figures of the Buddha and attendants are usually portrayed. All, however, are in a sorry state of dilapidation and not worth conserving *in situ*. The other two structures, Nos. 2 and 4, are mere platforms oblong in shape and devoid of ornament; they are clearly not stūpas, though what purpose they served, is not clear.

Outside the limit of the stūpa court on the west are the remains of structures of small diaper masonry, but they have suffered so much from the detritus washed down the steep hill slopes that they would now hardly repay excavation. Against the wall on the south side of the court was a row of chambers, four towards the eastern end and one at the western. In the space between them, patches of lime plaster painted red were found still adhering to the wall of the court at R, and a few heads and other fragments of stucco figures were unearthed in the corner at the point S. All the chambers on this side of the court are raised on plinths about 2′ 3″ high, and with the exception of the third from the eastern end, which served as an entrance portico to the monastery, were undoubtedly image chapels.

The first court of cells, D, is a small one, comprising a vestibule and 8 cells ranged on the north, west and east sides only. This accommodation, however, was augmented by the addition of two other courts further to the south, with nine or more extra cells; so that allowing for a double storey in each group, some forty monks in all could have been housed there. In court D the central depression—the only part open to the sky—was unusually small, measuring no more than 16 by 12 feet. At its S.-E. corner is the usual drain for carrying off the roof water. On the west side of this court the cells are still standing to a height of nine feet. They are provided with small windows set high in the back wall, the sills of which slope downwards to the inside, and with the customary corbelled wall niches. Communicating between courts D and E is a passage way nearly 9 feet in width, from which a flight of steps ascends to the first floor and which also gives access to two large rooms, one of which was almost certainly the Hall of Assembly. The other may possibly have served as a refectory, but inasmuch as there was no kitchen adjoining, this is unlikely. As is evidenced by its small diaper masonry, this monastery dates back to Early Kushān times, when the monks were accustomed to beg and eat their food in the city, and when no kitchen accommodation was, therefore, provided. In the case of Jaulian and other monasteries, which also go back to the Early Kushān period, kitchens and sculleries were added at a later date, and it is probable that similar additions were made here at Giri. If so, they may be situated in the as yet unexcavated area to the west of the Second or Third court of cells.

Besides the stucco reliefs referred to above from the Stūpa Court, the minor antiquities recovered from this monastery included a spear-head and arrow-head, fish-plates, rings, spoons and hammers of iron, a miniature casket, anti-

mony rods of copper, *pipal* leaves and rosettes of the same metal, bangles of shell, copper and glass, stone beads and the following objects that deserve more detailed description:—

1. Gold ornament set with 4 garnets *en cabuchon*, hollow in centre and made in two halves fastened together on one side by a pair of hinges. The gold is very flimsy. Ht. 1″. From GR. D. room 7. Pl. XX, fig. 3.

2. Relief of grey Gandhāra stone, $21\frac{1}{4}'' \times 8\frac{1}{4}''$. In lower half, Buddha seated in Indraśaila cave with attendant figure on either side and animals (? pigs) in front. In upper half, separated by railing, four *devas* shower down flowers from heaven on the Buddha's head. The composition, pose and modelling of the *devas* are exceptionally happy, and rank this relief among the best of the Gandhāra sculptures found at Taxila. From GR. D. room 2, Pl. XIX, fig. 1.

The coins recovered in this monastery number 309 in all, but most of them are much worn and many indeed wholly illegible. Besides Local Taxilan they include coins of Azes, Azes and Aśpavarma, Hermaios and Kadphises Soter Megas, Kanishka, Huvishka, Vāsudeva, Shapur III (?), Hormozd II, and a number of Indo-Sassanian issues that have not yet been identified. A fact that they bring out very clearly is that at the time of the destruction of the monastery, an extraordinary variety of coins issued several centuries before must have been still current in this part of India.

Sirkap.

Trial Trenches.

Besides the above digging at Giri, I also took in hand the laborious but necessary task of examining the extensive tract of open cultivated ground in the lower city of Sirkap, which lies to the west of the High Street buildings and extends from the north wall to the foot of the Hathial ridge. This tract, which includes also the rising ground immediately north of what I take to have been the Western or Water Gate of the old city, must once have been an important quarter and I had long been anxious to ascertain the character of the remains buried in it. The trial trenches which I sank for this purpose were 10 feet wide and aggregated a total length of about 7,200 feet. On an average they were between 5 and 6 feet deep, sufficient, that is to say, to penetrate the first and second strata of buildings. Lower than this it is rarely possible to sink trenches in Sirkap without first removing the structural remains in the upper layers, and this I was naturally averse from doing. In the few places, however, where the absence of buildings of the Śaka and Pahlava periods permitted it, the digging was carried down to 16 or 17 feet and at one spot in Trench C as much as 24 feet. The structural remains encountered in this deep trench belonged to six distinct strata and descended to a depth of 20 feet below the surface, beneath which fragments of pottery and bones mixed with the soil continued to give evidence of human occupation. It is noteworthy that in the earlier strata the masonry is both superior and better preserved than in the later. From the indications obtained in trench C as

well as in pits sunk in previous years I incline to think that six or seven layers of buildings will be found in the greater part of the lower city of Sirkap and that the period of its occupation will have to be pushed back to a date considerably earlier than that which I had previously inferred. Of the periods to which the three uppermost strata belong there can be no doubt. The first appertains to the Early Kushāns before the reign of Kanishka, the second and third to the Scytho-Parthians who preceded them. To judge from the coin finds, the fourth and possibly the fifth, date from the time of the Greek occupation while the sixth is pre-Greek. It must be understood, however, that the above chronology is still provisional. As the digging proceeds, more data are sure to be found. Meanwhile, it is safe, I think, to say that the sixth stratum and anything below it are of pre-Greek date, and it is safe also to say that the earlier strata must have synchronised with the later strata of the city on the Bhir Mound; in other words, that in the 3rd and 4th centuries B.C. Sirkap must have formed part and parcel of the city on the Bhir Mound. Parenthetically, it may be observed that great caution is required when drawing inference as to date from occasional finds of coins. In Sirkap, the foundations of some of the later structures are very deep, being carried down as much as 12 to 16 feet. In sinking them the builders had to penetrate through two or even three antecedent strata; and when the ground was disturbed for this or other purposes, it was easy for an occasional coin of the currency to find its way into an earlier level. Hence it is unsafe to draw conclusions from coins unless they are reasonably numerous and spread over a considerable area or found in circumstances which leave no doubt as to the date of their deposit. As illustrating the unexpected depths at which coins may be found, I may mention that during the recent excavations in Sirkap coins of Azes I were found at the following levels:—14 between zero and 2 feet; 29 between 2 and 4 feet; 17 between 4 and 6 feet; 7 between 6 and 8 feet; 5 between 8 and 10 feet; and 3 between 12 and 14 feet. On the other hand, 12 coins of Azes II were found between zero and 2 feet; 45 between 2 and 4 feet; 22 between 4 and 6 feet; 24 between 6 and 8 feet; 1 between 10 and 12 feet; and 1 between 14 and 16 feet.

As to the structures in the two uppermost strata laid bare in these trial trenches, they appear from the thickness of their walls and the character of their small diaper or rubble masonry to be generally similar to the residential buildings excavated in other parts of the site. Here and there, however, lengths of more massive walls were met with which clearly belong to buildings of a different and more imposing class. Thus, in trench D (squares 64 to 72), a section of wall, 5′ 3″ thick, was followed up for a space of 195 feet, and in the same trench (squares 121 and 122) was another fine piece of walling of the early diaper type. Again, in trench G (squares 4 to 11) there was a particularly strong and well built wall of the third stratum, 3′ 2″ thick and 80 feet in length.

Other features of interest met with in these trial trenches were patches of fragmentary brick pavements or floors (D. 74 to D. 79) belonging to the second

stratum; floors of slate slabs (F. 1 and F. 15) belonging to the first stratum and several lengths of underground drains, also of the second stratum (B. 8 and B. 9 and F. 26). Of the drains the best example was that found in trench B. 8 and 9. Two sections of it were exhumed, connected, one with the other but of different construction. The first, which measured 26 feet in length, was 1 ft. 2 inches wide internally and built of stone throughout; the other (Pl. XVIII, *b*), which was traced for 35 feet, consisted of earthenware pipes, 9″ in diameter and from 12½″ to 14½″ in length protected by stone walls on either side. Each length of pipe has one end expanded, the other tapering, so as to fit one into another.

Among the smaller objects recovered from these trenches the following are specially deserving of notice:—

Coins.

1. Æ ·44 roughly cut flan. ·22 thick. Stamped on one side only with solar symbol. Trench C, 12′ 8″ below surface. The earliest type of coin yet found on the Sirkap site. Probably earlier than the well known "punch marked" issues.

2. Æ ·52. *Obv.* Couchant bull to l. *Rev.* ditto. D. 85, 8′ below surface. Cf. *A. S. R.*, 1912-13, p. 45.

3. Æ ·78×·58. *Obv.* Lion standing to l. with chaitya in front. *Rev.* elephant to right. Trench B. 2; 8′ 2″ below surface. Cf. *I. M. C.*, p. 158, No. 30. Not previously found at Taxila.

4. Æ ·9. Euthydemos. Trench D. 34. 4′ 6″ below surface. Cf. *P. Mus. Cat.*, Pl. I, 16. Not previously found at Taxila.

5. Æ ·1×·93 Archebios. Trench D. 124. 4′ below surface. Cf. *P. Mus. Cat.*, Pl. IV, 230.

6. Æ ·98×·81. Maues. Trench D. 66. 2′ below surface. Cf. *B. M. Cat.*, Pl. XVI, 6.

7. Æ ·61×·61. Ditto. Trench D. 74. 8′ below surface. Cf. *P. Mus. Cat.*, Pl. X, 18.

8. Æ 1·08 Azes. Trench D. 26. 9′ below surface. *P. Mus. Cat.*, Pl. XII, 304.

9. Æ ·63. Ditto. Trench D. 128. 4′ 4″ below surface. Cf. *P. Mus. Cat.*, Pl. XI, No. 172.

10. Æ ·98. Gondophares. Trench D. 34. 4′ 6″ below surface. Cf. *P. Mus. Cat.*, Pl. XV, No. 59.

Miscellaneous antiquities.

Among the miscellaneous antiquities found in these trenches were numerous large store jars of earthenware (*e.g.*, in D. 95 and 142, and in F. 1, 2, 15 and 21), several fragments of "offerings' tanks" and the following:—

1. Collection of iron objects in a much corroded and fragmentary condition. One, comprising clamps, bells and fastenings, from Trench B. 18, 3 feet below surface; a second, including a small iron cart, from F. 7, 3′ 7″ *b.s.*; and

a third, including scale pans and sword blades, from F. 9, 1′ 2″ *b.s.* These objects were all too disintegrated to be treated chemically.

2. Two miniature tripod bowls of copper. One from D. 11, 2 ft. below surface; ht. $2\frac{5}{8}$″. The other from D. 15, 5′ 6″ *b.s.*; ht. 1·2″. Pl. XX, fig. 4.

3. Hair pin of copper with female figure for terminal; length 3·3″. From G. 51; 3 ft. below surface. Pl. XX, fig. 2.

4. Collection of the following objects from trench D. 34, 4′ 6″ below surface:—

(*a*) Earthenware water cooler with spout and 3 lugs pierced for suspension. The upper part is adorned with linear, floral and other patterns in chocolate on a cream coloured slip. Diam. $14\frac{1}{4}$″. Pl. XXI, fig. 9.

(*b*) Copper carinated goblet with horizontal ribbing round lower part; ht. 6·3″. Inside the cup were 341 copper coins including 1 of Euthydemos, 1 of Maues, 1 of Azes, 6 of Hermaios and Kujula Kadphises and 332 of Kadphises alone.

(*c*) Copper ladle with looped spatulate handle. Length 8·4″.

(*d*) Copper cup with vertical sides on low base. Ht. $3\frac{3}{4}$″.

5. Cylindrical vase of steatite relieved with incised bands round body, neck and rim. From H. 56, 1′ 10″ below surface. Ht. $6\frac{3}{8}$″. Pl. XIX, fig. 6.

6. Seal of steatite with horse crudely engraved on it. $2\frac{1}{2}$″ × $1\frac{1}{2}$.″ From trench F. 1. 6′ 8″ below surface.

Blocks C′ D′ and E′.

The sinking of the trial trenches described above occupied the greater part of the autumn season of 1927, and it was not until December that I was able to resume the task of systematically clearing the blocks of buildings on either side of the High Street. The blocks on which I then concentrated particular attention were those designated C′, D′ and E′, to the west of the High Street. Of these the second is directly opposite the Buddhist Apsidal Temple and the others on either side of it, C′ on the north, separated from it by Eighth Street and E′ on the south, with Tenth Street intervening between the two. The clearance of these three blocks has now been carried westward for a distance of between 450 and 500 feet but from within this excavated area there still remains to be removed a considerable mound of spoil earth, which lies across the middle from north to south. The area actually cleared during the past season amounted to nearly 7,000 square yards, but for the most part the digging was not carried deeper than five or six feet, as my first objective here, as in other parts of the site, was to lay bare the plans of the Early Kushān and Scytho-Parthian structures near the surface and afterwards proceed to the examination of the earlier strata; for which purpose it will eventually be necessary to remove the uppermost layers of buildings. At certain points, however, where the open spaces in the latter were large enough to permit of it, the third and fourth strata were opened up and, in one or two places, the fifth and sixth.

As the excavation of these blocks progresses further to the west, it becomes increasingly clear that each of them comprises a number of houses divided one from the other by party walls, but for the most part so erratically planned that it is frequently impossible to determine which are party and which interior walls. Precisely the same irregularity in planning was observed last year in the case of the blocks on the opposite side of the High Street, and indeed it is common to practically all the middle class houses of the Parthian period in Sirkap. In this respect they contrast very unfavourably with the few houses belonging to the Early Kushān period that have survived in the topmost stratum, all of which are planned on regular and clearly defined lines and more compactly built into the bargain. Apropos of this irregular planning of these houses, it will be interesting to determine, as the digging goes deeper, whether the Parthians were responsible for the strikingly symmetrical lay-out of the streets or whether they inherited this from their predecessors of an earlier generation. So far as the limited evidence goes at present, it appears likely that the general plan of the city dates back to an earlier period than the Parthian, but whether the streets were as straight is doubtful. It is not unlikely, too, that in building their houses also the Parthians may have adhered to some extent to the plans of pre-existing ones, since in the few places where earlier walls have been exposed, they have been found to coincide as often as not with the walls above them; and obviously it would have been an advantage to make use of them as foundations for the later structures.

Of the minor antiquities found in this area particular interest naturally attaches to those emanating from the third and lower strata. Among them may be noticed the following:—

From the third stratum.

1. Tapering copper tube, perhaps part of a flute, adorned with the forepart of a horse (? Pegasus) in ivory. Length 3⅜″. The horse springs from an acanthus leaf encircling the tube and is fastened to the latter by a small copper chain attached to its mouth. Passing round its body above the acanthus leaf is a circlet of copper wire. The head and right leg of the horse are damaged, but the modelling and workmanship are excellent and unquestionably Hellenistic. From block E′, Sq. 73·90′; 6′ 9″ *b.s.* Reg. No. 888. Pl. XX, figs. 6 and 8.

2. Square copper seal 9-16″×9-16″. On face, in centre, swastika with line of Kharoshṭhī lettering on either side. The ring at back is missing and the legend illegible at present. From block E′, Sq. 76·84′; 6′ 8″ *b.s.* Reg. No. 529.

3. Round dish of steatite, diam. 4′ 6″. In centre, rider on hippogriff. From block E′, Sq. 75·91′; 6′ 6″ *b.s.* Reg. No. 607. Pl. XX, fig. 9.

4. Copper *handi* with two ring handles attached to shoulder. Diam. 10½″. The body is made up of two sections rivetted together. Base damaged. From block D′, Sq. 61·118′; 6′ *b.s.* Reg. No. 1539.

5. A pair of small iron cart-wheels with spokes and axles. Diam. 7¼″, length of axle 1′ 8¼″. From block D′, Sq. 61·118′; 6′ 4″ *b.s.* Reg. No. 1548.

6. Iron anvil. Ht. 6¾". From block D′, Sq. 61·118′; 6′ 6″ *b.s.* Reg. No. 1549.

7. Collection of 25 iron bells, ranging from 2⅝" to 8½" in ht. From block D′, Sq. 61·118′; 6′ 4″ *b.s.* Reg. No. 1551.

8. Narrow necked vase of grey clay with slightly polished surface. Ht. 6·7″. From block E′, Sq. 73·109′; 6′ 6″ *b.s.* Reg. No. 1662.

9. Earthenware vessel with two bands of incised ornament around shoulder; light red clay; traces of two handles; lip broken. Ht. 7″. From block D′, Sq. 61·118′; 6′ 2″ *b.s.* Reg. No. 1541. Pl. XXI, fig. 4.

10. Standard bowl of copper. Ht. 7¼". At each corner of the square base is a bird with wings outspread. From block E′, Sq. 73·90′; 6′ 9″ *b.s.* Reg. No. 887. Pl. XXI, fig. 8.

To the same (third) stratum, though found at a somewhat lower level, appears to belong the relic casket of grey schist in the form of a stūpa (ht. 5·25″) which is figured in Pl. XXI, fig. 7. It was found in block D′, Sq. 63·119′, 10′ *b.s.* and is very similar to one found in Sq. 52·85′ at a depth of 3′. (Reg. No. 1653). From the fourth or fifth stratum came the two handled bell-shaped vessel of fine light red ware (ht. 8′ 7″) which is figured in Pl. XXI, fig. 1. It was found in block D′, Sq. 64·118′ at a depth of 14′ 6″. (Reg. No. 1713). In connection with this vessel, it is noteworthy that in ancient, as in modern India, earthenware vases were seldom provided with handles. Even at Taxila, where Hellenistic influence was strong, they are rare, but may be expected to be more frequent, when the third and fourth strata of buildings come to be cleared.

Of the miscellaneous objects and coins recovered among the Early Kushān and Parthian remains, that is in the first two strata, the following are the most interesting :—

1. Fragmentary relief of grey Gandhāra stone. Ht. 13¼". In front, a figure, upside down, slung to a pole, which two men are carrying on their shoulders. To the right, another figure standing, much defaced. Behind, five figures looking on, of whom the one on the extreme left carries a flask in his left hand and raises his right in the *abhaya* pose. He may, therefore, be a Bodhisattva. The identification of the scene is uncertain. From block E′, Sq. 75·93′; 1′ 6″ *b.s.* Reg. No. Sk. 82. Pl. XIX, fig. 2.

2. Vase of light grey Gandhāra stone. Ht. 5·5″. The neck is pierced with 4 holes; around the shoulder and body are three incised bands. From block D′, Sq. 66·119′; 4′ *b.s.* Reg. No. 1342.

3. Round offerings dish of grey stone. Diam. 5·7″. Interior divided by two pairs of cross lines into nine compartments, of which the four corner ones are filled with roughly incised quatrefoil devices. From block E′, Sq. 77·90′; 5′ 6″ *b.s.* Reg. No. Sk. 501. Pl. XXI, fig. 6.

4. Round offerings dish of fine grey stone. Diam. 6″. Inside and to left, above exergue, winged figure riding winged antelope; to r., small wild ram, and behind it, winged monster attacking antelope. Rim decorated with half-lotus device. The winged antelope and rider call to mind contemporary figures.

on the gateways of Sanchi. From block E′, Sq. 77·90′; 5′ 6″ *b.s.* Reg. No. Sk. 501. Pl. XX, fig. 10.

5. Round offerings dish of blue-grey stone. Diam. 5·8″. Inside hippocamp in upper half, foliate design in lower. From block E′, Sq. 74·108′, 2′ *b.s.* Reg. No. Sk. 1649. Pl. XXI, fig. 2.

6. Copper statuette of male figure. Ht. $4\frac{1}{2}$″. Wears *dhoti* from hips downwards, and scarf wrapped over left shoulder; necklace tied behind, earrings and bracelets. Helmet-like headdress with deep flap behind. r. and l. hands on hips, holding uncertain objects. From block E′, Sq. 74·90′, 4′ 6″ *b.s.* Reg. No. 295. Pl. XX, fig. 1.

7. Copper inkpot with serpentine handle and stopper originally attached to it by chain. Diam. of rim 4·1″. From block E′, Sq. 77·91′; 3′ *b.s.* Reg. No. 177, Pl. XXI, fig. 5.[1]

8. Copper pen with nib split as in reed pens. Length $5\frac{3}{4}$″. From block D′, Sq. 66·119′; 4′ *b.s.* Reg. No. 1335.

9. Standard cup of copper. Ht. 2·75″. From block C′, Sq. 47·95′; 4′ 3″ *b.s.* Reg. No. 1019.

10. Copper bowl. Diam. $7\frac{1}{2}$″. From block E′, Sq. 76·90′. 2′ 10″ *b.s.* Reg. No. 1028.

11. Copper pan with ring handle. Diam. 10·5″. From block E′, Sq. 74·85′; 3′ 0″ *b.s.* Reg. No. 884.

12. Ditto. Diam. 13″. From block D′, Sq. 60·119′, 4′ 3″ *b.s.* Reg. No. 1319.

13. Copper bell jar. Ht. 1′ $9\frac{3}{4}$″, made in two sections and rivetted. From *block C′, Sq. 44·96′; 4′ b.s. Reg. No. 106.*

14. Terracotta disc with floral and linear designs. Diam. $5\frac{3}{4}$″. Sq. 75·92′; 3′ *b.s.* Pl. XXI, fig. 3.

15. Copper ladle with spatulate handle looped backward at the end. Length 13″. From block D′, Sq. 62·117′; 3′ 6″ *b.s.* Reg. No. 1336.

16. Bronze terminal of (?) staff surmounted by *dharmachakra*. Ht. $5\frac{1}{2}$″. From block E′, Sq. 79·84′; 1′ 9″ *b.s.* Reg. No. 149. Pl. XX, fig. 5.

Coins.

1. Local Taxilan. Æ ·6. *Obv.* Tree in railing. *Rev.* blank. Sk. 210.
2. Philoxenos. Æ ·83×·85. Sk. 65. Cf. *P. Mus. Cat.*, Pl. VII, 590
3. Azes. Æ ·48. Sk. 62. Cf. *Ibid*, Pl. XI, 40.
4. Ditto. Æ 1×1. Sk. 147. Cf. *Br. Mus. Cat.*, Pl. XIX, 10.
5. Ditto. Æ 1×1. Sk. 478. Cf. *P. Mus. Cat.*, Pl. XI, 217.
6. Gondophares. Æ ·48. Sk. 1487. Cf. *Ibid.*, p. 151. No. 39.
7. Uncertain. Æ ·8×·8. *Obv.* Lotus bud and leaves. *Rev.* Uncertain object. Sk. 29. Unique.
8. Ditto. Æ ·55×·5 *Obv.* Solar symbol (?) in dotted circle. *Rev.* Inscription uncertain. Sk. 1349.

[1] For a group of copper objects *in situ*, including this inkpot see Pl. XVIII, fig. c. — Ed.



9. Ditto. Æ ·48. *Obv.* King on horseback. Gr. leg. illegible. *Rev.* Deity (? Pallas) standing to r. *Nandipada* symbol to l. Kh. legend illegible. Probably of Azes. Sk. 938. Cf. *P. Mus. Cat.*, Pl. XV, 400.

The total number of coins found in Sirkap this season was 789, of which 526 belonged to Kujula Kadphises, 112 to Azes II, 74 to Azes I, 28 were local Taxilan and 89 were illegible. The other rulers represented were :—Euthydemos, 1 ; Archebios, 1 ; Apollodotos, 2 ; Philoxenos, 1 ; Hermaios, 2 ; Maues, 3 ; Azes and Aśpavarma, 2 ; Gondophares, 12 ; Abdagases, 5 ; Rañjuvula, 7 ; Hermaios and Kadphises, 6 ; Hermaios, 2 ; uncertain, 15.

Other buildings in Sirkap in the clearance of which substantial progress was made during the past year, but which can more conveniently be described later, were blocks B′, F, L and P′, the last mentioned a structure of proportions as massive almost as the Palace itself, to which it stands opposite on the other side of the High Street. Simultaneously with these operations, the opportunity was also taken of continuing the excavation of the High Street towards the south as far as the foot of the Hathial spur. A special reason that I had for following up the Street in this direction was that I assumed the existence of another street of some importance running east and west across the city and crossing the High Street at a point a little south of the modern pathway across Sirkap, and I thought it not unlikely that there was once an open square at the intersection of the two streets. My excavations have not yet gone far enough to prove or disprove the correctness of this surmise, but it is noteworthy that in the 30 ft. trench which I cut across the area in question no remains of buildings were met with, though they were picked up again as the trench neared the Hathial spur. The probability, therefore, that there was in fact an open space, or perhaps a tank, at this point is increased. An unexpected feature lighted upon in this digging was a mass of rough rubble masonry across the High Street in squares 200-202, 72′—74′ beneath the modern pathway referred to above. This masonry which is some 30 feet in thickness and pierced by a drain from north to south, is evidently only a foundation and from its construction as well as its level, appears to be considerably later than the later Parthian remains on the north. Possibly it may date from the later Kushān period when the Kunāla stūpa and monastery were erected there, *i.e.*, about the 4th century A.D. Among the minor objects found in the structures uncovered near the foot of Hathial (Sq. 229·75′) was another of the curious stone discs of which three examples had previously been found on the Bhir Mound[1] and one at Kosam (Pl. XX, fig. 7). It is of polished sandstone 3¼″ in diam. adorned on the upper surface with concentric bands of cross and cable patterns and with four nude female figures alternating with honey-suckle designs engraved in relief around the central hole. The exquisitely fine technique of this carving on sandstone coupled with the style of the figures leave no room for doubt that all these discs are products of Mauryan art. What their purpose was, still remains in doubt. It could hardly

[1] Cf. *A. S. R.*, 1920-21, Pl. XVII, 30.

have been utilitarian, nor are they suited for personal ornaments. The nude figures engraved on them appear to represent a goddess of Fertility, perhaps the earth goddess Pṛithivī, and they point to the discs having served as votive offerings. The Earth itself, it may be recalled, was conceived of as wheel-shaped[1] in the *Ṛigveda*, and is said to be 'circular' in the *Śatapatha Brāhmaṇa*. A disc of terracotta bearing an image in relief of a goddess of Fertility, who may be identical with Pṛithivī, was unearthed by me in 1911-12 at Bhiṭā and is published in my Report for that year.[2] It belongs to the Kushān or early Gupta age and depicts the goddess with legs wide apart and with a lotus—emblem of birth—issuing from her neck in place of her head. A similar plaque was also found at Kosam and is now in the Indian Museum.[3] With these may be compared a sealing from Harappa (No. 649) exhibiting the goddess of Fertility with her legs wide apart as on the plaques referred to, but portrayed upside down with a plant issuing from her womb instead of from her neck. These figures of the Fertility goddess are particularly significant, because the form of the ring-stones from Taxila and Kosaṁ also calls to mind the peculiar ring-stones from Harappa and Mohenjodaro, which I have elsewhere suggested were votive offerings symbolic of the *yoni*. The cult of the *yoni* as of the *liṅga* has long been recognised as pre-Aryan in origin and examples of it might naturally be expected to occur among the antiquities of Harappa and Mohenjodaro, which there are the strongest reasons for regarding as pre-Aryan. Whether the pre-Aryan goddess of Fertility afterwards came to be identified with the Vedic Pṛithivī, and whether it is the latter or the former who is represented on the Taxila ring stones, are questions on which further light is needed.

EXCAVATIONS AT MOHENJODARO.

By Mr. E. J. H. Mackay.

Excavations were carried out in two areas at MOHENJODARO during the season 1927-28. A large expanse of untouched ground lying between the Stūpa buildings and the Great Tank was the first to be attacked. After the commencement of the work at the end of October we laid bare the upper portion of a large detached building of considerable importance.

On reference to the plan in Plate XXII, it will be seen that the building situated to the east is of some complexity. This apparent lack of clearness will, however, disappear if in this purview we take into consideration only those walls that are marked in full black. The walls of intermediate date, some of which lie beneath the walls of late date (those filled in with black) have not yet been sufficiently cleared to admit of detailed description. Indeed, to make a proper plan of the buildings of intermediate date in this area will necessitate the removal of the superposed walls of late date, which it has not as yet been thought desirable to do.

[1] *Rig.* X. 89·4. Macdonell and Keith, *Vedic Index*, Vol. I, p. 362.
[2] *A. S. R.*, 1911-12, p. 75, No. 40, and Pl. XXIII, 40.
[3] *I. M. Cat.*, II, p. 286, No. KM. 36.

The late walls, however, do help us to visualize the earlier portion of this building, for as the levels rose the intermediate walling was in most places merely heightened in the late period. The greater number of those walls that are marked in full black rest on and, in the majority of cases, are of the same thickness as the intermediate walls that support them.

MIDDLE SECTION.

Block 1.

This is one large building in the eastern portion of the area, and it is bounded by streets on the south, east and west. On the northern side of this building there is a certain amount of confusion due to denudation, and we are not sure at present whether block 3 did not once contain a building separated by a fourth street from the one to be described.

The very fine building in Block 1 measures nearly 270 feet long, N. S., by 60 feet wide, E. W. Its outer walls are complete except for a considerable portion on the western side which has been removed by brick-robbers. We do not know if there was once an entrance on this side; but the probability is that there was, though there is nothing that may once have been a door-jamb in what is left of the walling of this side. It is quite unlikely that there was no entrance into this building from a street as important as that which runs along its western side.

At the southern end of the building there was one narrow doorway, found partially blocked up, which leads into chamber 2. At the northern end there may or may not have been an entrance; the wall here is missing and, consequently, we cannot be certain on this point. On the eastern side, there were certainly four entrances and possibly a fifth. At the northern end of this side there may have been an entrance into chamber 78. The wall here has obviously been repaired and though no definite door-jambs are visible, they may have existed and fallen down before repairs took place. Further to the south a definite doorway which was found open leads into chamber 55. To the south again, a blocked-up doorway was found which once communicated with chamber 36, and further along again two entrances into passage 35, both of which had been bricked up in ancient times.

The walls of the street on this side of the building are in a remarkable state of preservation, standing as they do in places over 12 feet high. In this street was found the interesting little steatite figure (Sd. 3,008) illustrated in Plate XXV, No. 1, which is 0·58 in. high. The narrow sloping eyes of this figure are typical of the ancient Indus Valley art; they are seen in all the pottery figurines as well as in the stone statuary. This figure belongs to the intermediate period. The street averages 8 feet wide and a narrow drain runs down its centre throughout its entire length.

The mound rises to a considerable height on the eastern side of this street, and here we excavated several chambers of the monastery of Buddhist date that surrounds the stūpa which crowns the Sd. area. Buried deep below the pavement of one of these chambers we were so fortunate as to find the well

made pottery vessel (Sd. 2,887) illustrated in Plate XXV, No. 8. This jar is 6·3 ins. high and made of a light-red paste. Its highly polished slipless surface resembles stone. This vessel contained over a thousand copper coins (Sd. 2,887*a*), but unfortunately in a sadly corroded state (Pl. XXV, No. 5). After cleaning, however, they were found to be those of the Kushān king Vāsudeva I. Unluckily, those coins that could be cleaned are of two varieties only and do not assist us much in classifying the coins of that period.

A somewhat important courtyard, which measures about 33 feet square (Nos. 61, 66 and 67), lies at the northern end of the block. Its northern wall is plain, but the remaining three walls are fenestrated in a similar manner to the inner wall surrounding the Great Tank. A wide passage encircles three sides of this court, communicating with it by all the fenestrations, whose sills are all about the same level. But unlike the fenestrations in the Great Tank, these are all doorways and not windows (Pl. XXIV, *a*).

Towards the end of the late period to which this court belongs it was apparently utilized for other purposes. Here and there small portions of it were paved and used as a kitchen. Two roughly built circular structures of the thickness of one brick were set up in the north-eastern corner, apparently to serve as storage bins. We also found a large earthenware jar against the eastern wall of the court that contained animal bones, some of which have been identified as those of a sambhur deer.

This report does not allow of the remaining chambers being described in detail. We may, however, state that in chambers 34 and 42 there are staircases that once led to rooms above. That in chamber 34 seems to be a later addition, for the foundations of its lowest step are considerably higher than the original paving of the chamber, most of which had been entirely removed in ancient times.

Stūpa Section.

Block 2.

This block consists mainly of Buddhist buildings resting on masonry of the Indus Valley civilization. It forms part of the complex of cells around the stūpa to the east of it.

Middle Section.

Block 3.

Though this block has been cleared to the same level as the buildings to the south of it, we found but little masonry except at its extreme south and west. There seems to have been a large open space here enclosed by an unusually massive wall some 8 feet thick. Unfortunately, to the east and north of this block the mound is very much denuded and, in consequence, we shall never know how far these thick walls extended.

The street which separates block 4 from the building containing the Great Tank has been cleared to the level of the stone-covered drain that runs down its centre. It averages 13 feet wide and though comparatively narrow must once have been a very important thoroughfare, situated as it is between two of the most important buildings yet unearthed at Mohenjodaro.

NORTHERN SECTION.

Block 4.

One portion of this block which appears to be a single building enclosed by narrow lanes on all four sides is also seen in Plate XXIV *b*. In the southern part of this block the chambers which are of intermediate date are overlaid by masses of masonry of the late period; several of them are entirely filled up by it, with the possible intention of making a platform to support the later buildings. A considerable amount of work will have to be done here to determine the meaning of this platform and to explore the chambers that lie below it.

In the middle of block 4 a most interesting group of chambers was found, comprising two rows of bathrooms separated by a narrow passage, along which runs a drain (Pl. XXVI, *a* and *b*). Each room has a very narrow doorway, through which a small channel runs into the drain in the passage. The careful paving and drainage of these rooms definitely prove them to be ablution places. But it is far from usual to find staircases in bathrooms, and the fact that not a single bathroom lacks its stairway calls for an explanation. One of these stairways is illustrated in Plate XXVI *b*. The fourth wall of this chamber had been entirely removed by brick-robbers.

These ablution places may have been used by priests who were possibly quartered in cells above, from which they descended to bathe. On the other hand, the rooms may have been entered by the bathers from below and in this case it is possible that after making himself ceremonially pure the occupant of each bathroom ascended by the staircase to a chapel above to perform his devotions. I am inclined to regard the first explanation as the more likely, since the passage between the two rows of bathrooms is much too narrow to permit of people passing in it, and because of the presence of the uncovered drain. Probably this passage was only used by the servants whose business it was to supply water to the various rooms; and it should here be mentioned that pottery vessels that were probably used for this purpose were found in some of the rooms.

It should also be pointed out that due regard was paid by the architect of this curious building to the question of privacy. None of the doorways face each other, and owing to their narrowness and the thickness of their door jambs it is quite impossible to see into the rooms by accident and difficult so to do intentionally.

In the bathroom numbered 23 a bronze figure of a buffalo (Sd. 3,319) was found (Pl. XXV, No. 4). This little figure measures 3 ins. long, and is of intermediate date, unless we are to suppose that these rooms were re-used at a later period, for which there is some evidence. Though badly corroded, it is clear that this little figure is a work of art.

The walls at the northern end of block 4 are sadly mutilated, partly by brick-robbers and partly by re-occupation in Kushān times. Some of the rooms were re-paved at this late period with old material, and fragments of Kushān sherds were found lying about.

NORTHERN SECTION.

Block 5.

To the north of block 4 lies another group of buildings (Block 5), separated from it by a narrow lane. Here many of the walls of the Indus Valley period were removed during the Buddhist occupation and the alterations then made have greatly complicated matters. In the northern portion of this block the foundations were found of five circular structures, averaging 12 feet in diameter, which were very roughly built of re-used burnt brick. In all probability these are the remains of small stūpas of Kushān date. To test this theory we excavated the foundations of one in the hope of recovering Buddhist relics, but without success.

Further to the north again there are a number of Buddhist buildings which we hope to clear and properly examine during next season.

NORTHERN SECTION.

Block 6.

The northern part of this block also awaits excavation. In the southern portion a line of chambers of the Indus Valley period are so badly denuded as to lack any doorways, but from their regularity of shape we may suppose them to have been store-rooms. Their foundations are very massive and they were clearly substantial structures. To the south of this row of chambers there are a few denuded walls, beyond which the mound descends steeply to plain level.

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DK. AREA. G. SECTION.

In the season 1925-26, Mr. Dikshit cut a preliminary trench between sections B and D of the Dk. Area. This trench which was also marked D revealed traces of houses and buildings along its entire length. Judging from the thickness of the walls of many of these buildings it was evident that here lay an important quarter of Mohenjodaro. We decided, therefore, to extend our investigations here.

We commenced operations in February, 1928, on the southern side of the western end of the trench, immediately to the east of section E. Here numerous house-walls were found, mainly of the late period, and by their very rough workmanship clearly those of an artizan quarter (Pl. XXIII). Of this we found additional proof in the shape of four pottery kilns in various parts of the site. Practically the whole area was covered with a thick layer of broken potsherds, almost all of a single type of vessel.

On reference to the plan, it will be seen that the buildings whose walls are represented in full black are vastly inferior to those of intermediate date which are hatched. The latter are well constructed buildings with substantial walls, some of which still stand to a considerable height. When they fell into disrepair, the quarter was subsequently given over to the potters, of whom a

flourishing community lived here. In other parts of Mohenjodaro also, we know that there was a great difference in status between the peoples of the late and intermediate periods. As a general rule, potteries are only allowed outside a city so that the smoke may not annoy the inhabitants, and it is somewhat surprising to find the potter's quarters situated here. Nor in any other quarter have we found such a large space of ground given over to artizans of any other craft.

Block 1.

This block is apparently a group of three houses, only one of which is in a tolerable state of preservation. No doorways remain, save into house I from the lane 17. This narrow lane (17), which was subsequently blocked up, once communicated with another lane (8), running N-S., between houses I and II.

Block 2.

The eastern portion of this block has been denuded down to the tops of the walls of a large house (II) of intermediate date. The limit of the mound is reached here and south of it there was a street. In chamber 26 a large expanse of well laid paving has a number of brick-lined sunk holes in which once stood water and storage jars. The very interesting pottery sealing (Dk. 4134) illustrated in Plate XXV, No. 3, was found in this chamber, lying on the sill of its northern entrance. The curious creature in the centre of the sealing is duplicated in Dk. 3599, Plate XXV, fig. 9. It may perhaps represent an insect. This sealing measures 1·05 ins. square and 0·29 in. thick. The back is plain and the whole sealing was once covered with a thick red slip.

What is left of house II is well preserved and many of its doorways are still intact. House I is in a very bad state of preservation, and we shall probably remove it to get at the building of intermediate date that must lie below.

This portion of the area was covered with a layer of broken and rejected pottery from 6 to 8 feet deep, throw-outs from two kilns, whose remains were found in the large open space to the north of house I. It is unnecessary to describe these kilns in detail as more perfect examples will come under our notice later on.

Block 3.

Block 3 is separated from block 2 by a very narrow alley. It comprises five houses, three of which are of intermediate date. The other two are of late date resting on earlier masonry which will have to be examined later when the uppermost remains are removed. There seems to have been some disagreement between the owners of the adjoining houses II and III, for as will be seen in the plan each house has its own outer wall with a very narrow space between.

House IV, the upper parts of whose walls are of late date whereas the lower portions are intermediate in date, has some very curious niches in its western wall, which belongs to the earlier period. In all probability, these niches were provided for wind-scoops, such as are to be seen in the houses at Hyderabad, Sind, to-day. They are too high above the pavement, which is of intermediate date, to have been used as cupboards. But, on the other hand, wind-scoops are generally carried down as near to the floor-level as possible, though I have seen modern examples that are high up in the walls.

In chamber 32 was found the calcite seal illustrated in Plate XXV, No. 9. This is the first cylinder seal to be found at Mohenjodaro. In shape and material it is like some of the early seals of the pre-Sargonic period of Babylonia, but the motifs carved upon it do not in any way resemble the motifs on the seals of early Sumer or Elam. This seal measures 0·86 in. long, and it was found at a level dated to between the intermediate and late periods.

The comparatively well preserved pottery figure (Dk. 3506) illustrated in Plate XXV, No. 7, is of a type now well known at Mohenjodaro and Harappa. It measures 9·15 ins. high, and was found in the narrow lane between blocks 3 and 5 at a level that belongs either to the late intermediate period or the beginning of the late period.

Block 4.

This block is in the main uninteresting. Most of the walls of late date rest on intermediate masonry. A well paved chamber which may have been a bathroom lies in its south-east corner.

Block 5.

This block is a well preserved building of the intermediate period which was added to in the late period; but this later brick-work has been entirely denuded.

Though very substantial, this building which is a single house is very simple in design. Rooms 12 and 13 are perhaps the most interesting. They were formerly one apartment, which was sub-divided in the late period by a thin partition wall resting on the paved floor, in the middle of which there is a well, 2 feet 2 ins. in diameter, and built of wedge-shaped bricks. This apartment was entered from room 4. In room 6 the unfinished statue (Dk. 4647, Pl. XXV, No. 11) was found. It is made of lime-stone and measures 8·2 ins. high. Whether this statue was ultimately intended to represent a monkey or a human-being, it is difficult to say. The elongated head suggests the former animal. This statue can be definitely dated to the late period.



Block 6.

Block 6, whose walls are all of late date resting on intermediate masonry, is separated from block 5 by a very narrow lane. It comprises three separate houses, all of which are clearly defined.

House I is a very simple building around a large courtyard, in the middle of which is a well, 2 feet 4 ins. in diameter and built of both ordinary and wedge-shaped bricks. To the north of this well and partially partitioned off from it, there is a neatly paved apartment which was probably a bathroom. From this apartment a well preserved drain runs under the southern wall of the courtyard to the narrow lane outside.

The house next door (II) is somewhat complex and, either to avoid litigation or as a result of it, has its own outer wall. Though the pavements in this house are badly damaged, enough remains to show that practically all the rooms were floored with brick.

In the third house which is on higher ground most of the doorways are well preserved. Some, however, were clearly unused and were partially blocked up. As will be seen from the plan, there is little of interest in this house except its remarkable state of preservation.

Block 7.

This is a very complex group of houses, some of whose outlines are difficult to follow. House I, however, is very well defined, but unfortunately only the foundations remain with the result that the positions of the doorways cannot be ascertained.

House II is of intermediate date and therefore lies at a lower level than the later buildings that surround it, whose walls all rest on earlier masonry. Only the upper portions of the walls of this house have been cleared, for the reason that it will be better to leave it until the later houses around it can be removed, as they will be in the future.

Above chamber 33 of this house was found the unusual seal (Dk. 3615) pictured in Plate XXV, No. 2. This is the ordinary form of steatite seal, but engraved with a design rare on the seals, but fairly common on other objects from Mohenjodaro. The seal measures 1·1 ins. square and is of the late period for it was found in the filling just above the chamber.

House III is also a very simple building with a large courtyard in its southern half. House IV is largely destroyed by denudation, and so in a measure is house V, in which, however, traces remain of what was originally a well-laid pavement. House VI is also badly weathered and the position of its doorways cannot be determined. The lowest treads of two staircases are still intact, however, as is also a soakpit in the lane to the east, which formerly served this house and received the water of the street-drain. House VII is quite separated from its neighbours. Its walls, which are of late date, rest upon intermediate walling, and they are so badly preserved that only one doorway could be traced. The intermediate masonry here has been only just exposed, but it, too, seems to be foundations only.

It is uncertain whether No. VIII can strictly be called a house. A long wall which has no doorway in it separates its eastern portion from the western portion, which may perhaps have been a separate domicile.

This western portion, however, comprises nothing more than a large rectangular court with a well in the centre. This well is of intermediate date, but it was raised and repaired at a later period, the material used consisting mainly of broken brick. It is surrounded on two sides by a carefully laid pavement with an edging all round, except on the southern side where it has been destroyed.

Block 8.

Block 8 comprises two houses, but only the foundations remain of No. I. House II is better preserved and several of its doorways have been traced.

Block 9.

Block 9 probably comprises three houses, but where one ends and the next begins it is difficult to say. A most interesting kiln was found in a court that separates house III from houses I and II (Pl. XXVI, *d*). This is the first pottery kiln to be found at Mohenjodaro and merits a full description. It is circular in form and measures 7 ft. 1 in. in diameter. It now stands four courses high, with the bricks laid in alternate headers and stretchers, the walls being only 6 ins. thick. Around the edge of the kiln floor there is a ring of holes averaging 4½ ins. in diameter with one hole in the centre. These holes communicate with a hollow space below the floor of the kiln which is supported on rough masonry pillars, and this space in turn communicates with a rough flue that passes underneath the wall of the kiln to open at the surface of the ground. This flue appears to have been opened or closed as required, in order to regulate the draught through the space beneath the floor.

The kiln was probably closed in by means of a dome witn an aperture at the top by which the smoke escaped. The pottery to be baked was placed on the floor of the kiln together with the fuel, which we have been able to ascertain was wood and not charcoal. There must also have been a doorway in the side of the kiln to allow of the introduction and removal of the pottery. But there are no signs of this in the walls of the kiln as it now stands; it was probably at a higher level and has disappeared through denudation. Traces of wood ash were found on the floor of the kiln and a large quantity of broken pottery lay around it.

Traces of another kiln of a smaller size lie just to the west of the one described (Pl. XXVI, *d*). It is situated at a slightly higher level and is of different construction. It measures 4 ft. 8 ins. in diameter and has a rough column in the centre which probably supported a roof. An aperture on one side of it is 12 ins. wide. Unlike the first kiln, which seems to have been used only once as it shows very little evidence of burning, this second kiln is much vitrified inside; the surface of the bricks of which it was constructed has run in several places. Such a heat can hardly have been necessary for making pottery and possibly this kiln was used for firing the articles of vitreous paste which are so common at Mohenjodaro, though no traces of these articles, either broken or whole, have actually been found in the vicinity of this kiln.

The large circular structure that lies in the open space between blocks 9 and 10 was possibly intended to be another pottery kiln. It measures 15 ft. 5 ins. in diameter inside, its wall is 18 ins. thick and in places it stands 5 ft. high. No flues or pavement were traceable, nor is there any evidence of burning. It was apparently left unfinished and never used.

The fine clay figure (Dk. 3509) shown in Plate XXV, No. 6, comes from this open space (30) to the north-west of house I. It is 5·8 ins. high and represents a bearded man with long hair coiled up at the back. It can safely be dated to the late period.

Block 10.

This block comprises four houses, of which Nos. I and II are separated by a lane from Nos. III and IV. House II is of special interest as its doorways are unusually well preserved. A well in chamber 26 measures 2 ft. 9 ins. in diameter and is built entirely of wedge-shaped bricks (Pl. XXVI, *c*). The steening of the well shows the marks of ropes and the pavement around it, which is of bricks laid on their ends, is very much worn; it has collapsed in places, probably owing to water-logging. That this well shows signs of very extensive use is to be expected in a potters' quarter.

The adze-axe (Dk. 4541) illustrated in Plate XXV, No. 10, measures 10·4 ins. long and is made of bronze. It is the first of its pattern to be found at Mohenjodaro. It was found in the lane which separates blocks 7 and 10. That it belongs to the late period is certain, for it was found at a level well above that of the intermediate period.

The street that lies to the east of the newly excavated area just described (Pl. XXIII) must have been an important thoroughfare. In some places it is over 30 ft. wide and a row of shops along its eastern side shows that it must have been well frequented. Extending southwards for a considerable distance this street finally communicates with the wide street excavated two seasons ago in the Hr. area.

EXCAVATIONS AT JHUKAR.

By Mr. N. G. Majumdar.

The mounds known as JHUKAR-JO-DARO or 'the mounds of Jhukar' are situated to the east of the village of Mitho Dero, about 6 miles due west of LARKANA town in Upper Sind and a mile and a half to the south-east of Bero-Chandio, a small station in the Larkana-Dodapur Section of the North Western Railway. Jhukar lies to the north of Mohenjodaro, its distance from the latter in a straight line being only 16 miles.[1] During the year 1918-19 Mr. R. D. Banerji visited the site[2] and took a photograph of one[3] of the

[1] See Map 40 A (Sukkur) of the Survey of India.

[2] *Progress Report of the Archæological Survey, Western Circle*, 1918-19, p. 58.

[3] This is the B Mound mentioned below on p. 77.

mounds, which was declared a 'Protected Monument' in 1921. During the year under review I was deputed to Jhukar to carry out trial excavations and encamped there for about two months.

There are two mounds at the site, termed in the following account 'A' and 'B' (Pl. XXVII, *a* and *b*) which are separated from one another by a distance of some 300 feet. 'A' rises about 17 feet above the surrounding plain, while 'B' as much as about 63 feet. On the latter, there is a solid square structure made of old débris and beaten earth with a flat platform on the top, approached by a crudely built earthen stairway. It is evidently a modern construction raised on the vestiges of old buildings.

Three trenches were sunk at the 'A' mound: one south to north, right through the heart of the mound, measuring 106′×10′ (Pl. XXVII, *a*); a second along its side, running east to west and measuring 145′×12′; and a third one into the alluvial land itself, of the same dimensions as the second trench and running parallel to it. The area thus excavated showed clear traces of three different strata representing three periods of occupation. The latest settlement (stratum I) must have taken place during the GUPTA PERIOD (not earlier than the 5th century A.D.), as certain coins and sealings would testify, and it occupies vertically about 12′ of the mound. Of the dwellings built during this period nothing but a brick-paving, a brick wall and some fragments of sundried brick structures have survived. Reaching the middle stratum (II) a number of brick walls were discovered, the bricks measuring 10″, $10\frac{1}{2}$″ or 11″ in length, $4\frac{3}{4}$″ or 5″ in breadth and $2\frac{1}{2}$″ or $2\frac{3}{4}$″ in thickness. The bottom levels of these walls range between 12′ and 18′ from the highest point of the mound. Excavating still deeper, below the level of the alluvial plain, a few walls of the third period (stratum III) were brought to view. The bottom level of these walls varies between 20′ and 23′ and the bricks used are about the same in size as those of the middle stratum. In these measurements they correspond to the bricks employed in the buildings unearthed at Mohenjodaro and Harappa. Far more interesting, however, is the discovery at the two last mentioned strata, of *prehistoric antiquities* (Pls. XXVIII and XXIX) in the shape of copper and stone implements, pottery, pictographic seal, beads, etc., which mostly are identical with those from the above named sites of the 'Indus Valley Civilization.' Again, the absence of iron at both the strata at Jhukar also shows that they represent what is known as the CHALCOLITHIC stage of culture.

The lowermost and the middle strata have been provisionally designated EARLY PREHISTORIC and LATE PREHISTORIC, respectively. And we should note that in so far as designs and colour scheme are concerned, the painted wares which they have yielded, display certain characteristic features. Briefly stated they are as follows:—The early specimens usually represent designs in black applied to a dark red slip, but this system is not always observed during the Late period when there seem to appear new stylistic features, such as the representation of some parts of the design (*e.g.*, 'balls in compartments') in dark red against a light red or pink ground. The substitution of red or pink

wash for the slip also comes into vogue. Again, new motifs are evolved, the most typical being 'the hatched oval,' 'balls in compartments' and 'the spiral.' At Jhukar, out of the many examples of 'the hatched oval' only a few were discovered near the Early stratum, and none of the other two motifs was found below the Late stratum. Another point to note is the occurrence, in the Late stratum, of a kind of incised ware on which the decoration consists of rows of slanting strokes around the shoulder of vessels. This is extremely rare at Mohenjodaro and unknown at Harappa. The only pictographic seal found came from the Early level and not a single bead of the type illustrated in Plate XXVIII, 9 was discovered in the Late structures. Chert flakes, however, were common to both the levels.

No prehistoric object was brought to light in the excavations on Mound B, from which were recovered a number of household and other objects generally of the Gupta period (Pl. XXX). The buildings exposed consist of a number of rooms of varying sizes built of sundried bricks (Pl. XXVII, *c*). A masonry well, probably belonging to an earlier period, discovered below the floor-level of these rooms, yielded numerous fragments of a unique type of pottery with figures of the Buddha in relief. The dating of the buildings and their contents would naturally depend on the evidence of coins, about 300 in number, of which many were picked up from the aforesaid rooms. Some of these coins, although very much corroded, appear to be issues of Vāsudeva I of the Kushān dynasty. But the majority are of a type copied from Late Kushān specimens, and must have come into currency much later than Vāsudeva, probably in the 5th century A.D. Of the latter, hundreds were discovered in the cells around the Stūpa at Mohenjodaro. Our Jhukar collection does not include any issue of the Early Mirs of Sind whose coins have been found at Bahmanabad-Mansura.[1] This fact shows that the site must have been finally deserted before the date of the Arab conquest (A.D. 712). Other noticeable finds besides coins are a number of terracotta sealings (Pl. XXX, 1-3), each bearing a legend in Gupta characters of the 5th century A.D. ; a terracotta tablet with the etters *Musasa* (*i.e.*, 'of Musa') in Kharoshṭhī ; a terracotta sealing impressed with the bust of a king and bearing a legend which looks like Palhavi (Pl. XXX, 10) ; iron tools and weapons, *e.g.*, knives, daggers, spearheads, chisels, etc. and a few plaques, of which one in soapstone, with the figure of a horse, resembles some of those discovered at Taxila. But the most important of all is the *pottery* which shows at least four media of decoration, *viz.*, relief, painting, glaze and incision. The nature of the ceramic ware with designs in relief may be seen from Plate XXX, 4 and Plate XXVII, *d* with which may be compared a vessel from near Bahmanabad in Sind, illustrated in the *Annual Report of the Archæological Survey*, 1903-04, p. 138. Of *glazed pottery* we have two excellent examples of which one is reproduced on Plate XXX, 13. As regards painted pottery we have a fairly large collection which is of much interest and deserves special study (Pl. XXX, 8, 9, 11, 12 and 15). The designs are

[1] Cousens *A. S. R.*, 1903-04, Pl. XLVII and E. Thomas *Ind. Ant.*, 1882, pp. 89 95.

generally floral in origin and show a great variety. They are painted in black and red, but frequently in addition to these, a selection of other colours, such as yellow, chocolate, pink and cream, is also used. Incised decoration is found on the interior of a class of dishes or saucers (Pl. XXX, 6 and 7) the purpose of which, however, is not known. A vessel decorated with 'pimples' all over the outer surface (Pl. XXX, 14) is of special interest as it shows the survival down to historic times of a mode of decoration occurring on a number of prehistoric vases from Mohenjodaro and Harappa.

A list of selected antiquities is given below :—

I. Prehistoric Antiquities.

1. Terracotta cone (l.2.6″). From Mound A, St. III, level 20.77′. Reg. No. 521. Pl. XXVIII, fig. 1.
2. Chert core (l.2.85″). From Mound A, St. II, level 13.8′. Reg. No. 601. Pl. XXVIII, fig. 2.
3. Painted potsherd ; design in black on dark red slip. From Mound A, St. III, level 22.56′. Reg. No. 665. Pl. XXVIII, fig. 3.
4. Pottery tumbler (ht. 4.75″). From Mound A, St. II, level 13.82′, Reg. No. 547. Pl. XXVIII, fig. 4.
5. Pottery tumbler (ht. ·5.5″). From Mound A, St. II, level 15.2′. Reg. No. 472.
6. Terracotta cone (l.2.7″). From Mound A, St. II, level 13.35′. Reg. No. 596. Pl. XXVIII, fig. 5.
7. Terracotta animal figure (pig ?) ; l.9″. From Mound A, St. III, level 20.77′. Reg. No. 513. Pl. XXVIII, fig. 6.
8. Copper arrowhead (l.58″). From Mound A, St. III, level 21.48′. Reg. No. 650. Pl. XXVIII, fig. 7.
9. Pottery vase with pointed bottom (ht. 2″). From Mound A, St. III, level 20.84′. Reg. No. 659. Pl. XXVIII, fig. 8.
10. Steatite beads (dm. between .3″ and .55″). From Mound A, St. III, level between 24.79′ and 20.95′. Reg. Nos. 557, 644. Pl. XXVIII, fig. 9.
11. Ovalshaped pottery object with a hole (l.3.5″). From Mound A, St. III, level 24.78′. Reg. No. 709. Pl. XXVIII, fig. 10.
12. Steatite seal with 'unicorn' and pictographs (.9″×.9″×.35″). From Mound A, St. III, level 21.17′. Reg. No. 529. Pl. XXVIII, fig. 11.
13. Terracotta figure of goat (l.1.4″). From Mound A, St. III, level 20.77¹. Reg. No. 513. Pl. XXVIII, fig. 12.
14. Terracotta figure of bull (l.3.3″). From Mound A, St. III, level 20.77′. Reg. No. 513. Pl. XXVIII, fig. 13.
15. Painted potsherd : design in black on dark red slip. From Mound A, St. III, level 18.63′. Reg. No. 600. Pl. XXVIII, fig. 14.

16. Pottery vase (ht. 2.25"). From Mound A, St. III, level 24.79'. Reg. No. 640. Pl. XXVIII, fig. 15.
17. Painted potsherd; tree design in black on dark red slip. From Mound A, St. III, level 22.56'. Reg. No. 665. Pl. XXVIII, fig. 16.
18. Painted potsherd; plant and leaf design in black on dark red slip. From Mound A, St. III, level 20.77'. Reg. No. 512. Pl. XXVIII, fig. 17.
19. Painted potsherd; a series of 'double hooks' followed by 'cork-screws' in black on pink wash. From Mound A, St. II, level 18.08'. Reg. No. 539. Pl. XXVIII, fig. 18.
20. Pottery whistle (ht. 1.95"). From Mound A, St. III, level 22.06'. Reg. No. 543. Pl. XXVIII, fig. 19.
21. Painted potsherd; design in black on pink wash. From Mound A, St. II, level 15.65'. Reg. No. 687. Pl. XXVIII, fig. 20.
22. Pottery tumbler (ht. 2.9"). From Mound A, St. III, level 25.14'. Reg. No. 579. Pl. XXVIII, fig. 21.
23. Painted potsherd; triangles with balls at apexes in black on dark red slip. From Mound A, St. III, level 20.77'. Reg. No. 512. Pl. XXVIII, fig. 22.
24. Painted potsherd; balls in red within continuous loops in black, on light red wash. From Mound A, St. II, level 17.0'. Reg. No. 481. Pl. XXIX, fig. 1.
25. Painted potsherd; triangles with incurved sides and oval leaf motif, in black on light red wash. From Mound A, St. II, level 14.65'. Reg. No. 622. Pl. XXIX, fig. 2.

26—27. Pottery jar with pointed bottom (ht. 5.25"); balls in red within chocolate loops on pink wash. From Mound A, St. II, level 13.08'. Reg. No. 474.

Pottery jar with pointed bottom (ht. 4.6"); balls in red within chocolate loops; other designs in black, on red wash. From Mound A, St. II, level 12.2'. Reg. No. 475. Pl. XXIX, fig. 3.

28. Pottery jar with pointed bottom; much damaged; vertical lines of interlocked loops, 'hatched triangle' with incurved sides, and spirals[1], in black on light red wash. From Mound A, St. II, level 17.05'. Reg. No. 490. Pl. XXIX, fig. 10.
29. Painted potsherd; 'hatched rectangles' with incurved sides, in black on dark red slip. From Mound A, St. II, level 15.05'. Reg. No. 685. Pl. XXIX, fig. 4.
30. Pottery vessel (fragmentary); ht. 8.25"; red wash at shoulder and chocolate paint below; upper part of body decorated with two

[1] The 'spiral' does not occur at Mohenjo daro or Harappa, but occurs in Baluchistan (Noetling, *Zeitschrift für Ethnologie*, 1898, p. 469, fig. 42 and Ind ian Museum Nos. B. N. 56 A and B). Cf. Frankfort, *Studies in Early Pottery of the Near East*, Part II, p. 164.

bands of incised slanting strokes. From Mound A, St. II, level 13.82′. Reg. No. 545. Pl. XXIX, fig. 5.

31. Painted potsherd; design in black on dark red slip. From Mound A, St. II, level 17.29′. Reg. No. 493. Pl. XXIX, fig. 6.
32. Painted potsherd; 'hatched oval' and star in black on pink slip. From Mound A, St. III, level 20.01′. Reg. No. 664. Pl. XXIX, fig. 7.
33. Painted potsherd; design in black on dark red slip. From Mound A, St. III, level 20.77′. Reg. No. 512. Pl. XXIX, fig. 8.
34. Pottery dish (fragment); dm. about 9″; cross-hatched lozenge, 'hatched oval,' etc. in black on light red wash. From Mound A, St. II, level 12.27′. Reg. No. 549. Pl. XXIX, fig. 9.
35. Painted potsherd; star, 'hatched oval' and spirals in black on dark red slip. From Mound A, St. II, level 13.76′. Reg. No. 605. Pl. XXIX, fig. 11.
36. Painted potsherd; hatched oval leaf motif and balls in red in continuous loops on light red wash. From Mound A, St. II, level 17.0′. Reg. No. 481. Pl. XXIX, fig. 12.
37. Rectangular terracotta object with holes; 2.1″×1.85″×.75″. From Mound A, St. II, level 17.19′. Reg. No. 426. Pl. XXIX, fig. 13.
38. Painted potsherd; tree with cross-hatched branch in black on dark red slip. From Mound A, St. II, level 15.95′. Reg. No. 685. Pl. XXIX, fig. 14.
39. Chert flake (l.3.5″). From Mound A, St. III, level 22.53′. Reg. No. 575. Pl. XXIX, fig. 15.
40. Bone polisher (l.3.45″). From Mound A, St. II, level 17.35′. Reg. No. 603. Pl. XXIX, fig. 16.
41. Chert polisher (l.4.2″). From Mound A, St. II, level 15.12′. Reg. No. 524. Pl. XXIX, fig. 17.
42-44. Three chert flakes (l.2.4″; 1.95″ and 4″). From Mound A, St. II, level between 12.62′ and 14.85′. Reg. Nos. 76, 76 and 629. Pl. XXIX, fig. 18.
45. Copper spear-head (l.7.5″). From Mound A, St. II, level 16.08′. Pl. XXIX, fig. 19.

II. Antiquities of the Gupta Period.

1. Terracotta sealing (l.55″); inscr. in Gupta characters: *Srīr-Mmamakasya* ('of Mamaka'). From Mound A, St. I. Reg. No. 533. Pl. XXX, fig. 1.
2. Terracotta sealing (dm. ·9″); inscr. in Gupta characters: *Śrī-Rumachisa* ('of Rumachi'). From Mound A (northern slope), St. 1. Reg. No. 467. Pl. XXX, fig. 2.

3. Terracotta sealing (l. .75″); inscr. in Gupta characters: *Śrī-Karpari-Harasya*[1] ('of Śiva, the Wearer of Skulls'). From Mound B, St. I, level 11.33′. Reg. No. 763. Pl. XXX, fig. 3.
4. Fragment of pottery vase with Buddha figures in the Preaching Attitude in relief. From Mound B, well. Reg. No. 816. Pl. XXX, fig. 4.
5. Stone sculpture (ht. 1.9″) representing a Bodhisattva seated on a stool with r. hand in *Abhaya* pose. From Mound A, St. I, level 6.3′. Reg. No. 71. Pl. XXX, fig. 5.
6. Pottery saucer (dm. 5″) with design incised on the interior. From Mound B, St. I, level 9.28′. Reg. No. 526. Pl. XXX, fig. 6.
7. Pottery saucer (dm. 4.85″) with lotus design incised on the interior. From Mound B, St. I, level 6.25′. Reg. No. 834. Pl. XXX, fig. 7.
8. Painted potsherd; design in black on pink wash; alternate red slip and pink wash. From Mound B (western slope), St. I, level 17.2′. Reg. No. 277. Pl. XXX, fig. 8.
9. Painted potsherd; designs in chocolate and black on pink wash. From Mound B, St. I, level 11.05′. Reg. No. 398. Pl. XXX, fig. 9.
10. Terracotta sealing (l. .8″) with royal bust[2]; inscr. not clear, perhaps Pahlavi. From Mound B, St. I, level 7.14′. Reg. No. 756. Pl. XXX, fig. 10.
11. Neck of pottery jar; alternate red slip and pink wash; designs in chocolate on pink wash. From Mound A, St. I, level 7.06′. Reg. No. 169. Pl. XXX, fig. 11.
12. Painted potsherd[3]; lotus design in chocolate on cream wash. From Mound A, St. I, surface. Reg. No. 339. Pl. XXX, fig. 12.
13. Blue-glazed pottery jar with two handles (ht. 16.25″). From Mound B, St. I, level 5.98′. Reg. No. 98. Pl. XXX, fig. 13.
14. Pottery vessel (ht. 4″) with pimple decoration; no slip. From Mound B, St. I, level 3.37′. Reg. No. 100. Pl. XXX, fig. 14.
15. Pottery jar (ht. 10.5″); design of continuous loops in black on natural colour of pottery. From Mound B, St. I, level 5.98′. Reg. No. 92. Pl. XXX, fig. 15.
16. Spouted pottery vessel (ht. 9″) decorated with six female figures holding lyre and other designs in relief; spout missing. From Mound B, well. Reg. No. 817. Pl. XXVII, fig. *d*.
17. Pottery tablet (l. 5.1″×·6×1. 6″); inscr. in Kharoshṭhī characters: *Musasa* ('of Musa'). From Mound A (northern slope), level 12.43′. Reg. No. 507.

[1] A number of sealings bearing this legend were found on Mounds A and B. These are to be regarded as religious tokens like those found for instance at Bhita (*A. S. R.*, 1911-12, Pl. XVIII).

[2] The bust bears striking resemblance to that occurring on some of the White Hun coins described by Cunningham (*Later Indo-Scythians*, 1894, *e.g.*, Pl. VIII, figs. 14 and 15) and Marshall (*A. S. R.*, 1915-16, Pl. XXVI, figs. 46-50, and p. 37).

[3] A painted potsherd with design resembling the one described above was found along with a sealing (Reg. No. 778) of the type illustrated in Pl. XXX, fig. 3.

18. Potter's dabber (ht. 2.95″; dm. at base 3.7″); below the neck a group of two Brāhmī letters: *pra i,* incised at four places around the object. From Mound B, St. I, level 4.51′.
19. Copper coin[1] with crude figure of King standing; oblong; about .4″×.4″. From Mound A, St. I, level 12.82′. Reg. No. 675.
20. Copper coin with crude human figure on obverse and reverse wearing dress similar to that of royal figures on Late Kushān coins; round. From Mound B, St. I, level 10.68′. Reg. No. 188.
21. Copper coin; imitation of Late Kushān coins (probably of Vāsudeva I): poor; *obverse,* King with halo standing wearing long robe; *reverse* indistinct; oblong; about .4″×.4″. From Mound A, St. I, level 8.95′. Reg. No. 619.

EXCAVATIONS AT HARAPPA.

By Mr. Madho Sarup Vats.

The entire cold season was devoted to excavations at HARAPPA. Old trenches on mounds F and AB were expanded to open out larger areas and about 3 lacs of cubic feet of earth were excavated and removed, and some 3,000 finds recorded.

The "parallel walls" area was enlarged on all sides so that it now measures 230 feet square. While brick remains are, as usual, very fragmentary, there are a number of stray walls forming a few disconnected rooms on the west (Pl. XXXII, *a*). Several noteworthy finds were made. Among them are three seals depicting in a life-like manner an elephant, a rhinoceros with a feeding trough and a composite monster combining elephantine, bovine and leonine features; two sealings, one showing a large acacia tree enclosed by a railing which might be the precursor of the Buddhist railing in later times, and the other, a man with his back towards the spectator and carrying a wicker (?) basket suspended from his left hand and a long indistinct object in his right hand. He wears what may be a feathered head-dress and on either side of his head is a leaf-shaped object (Pl. XXXIV, *b*). Other finds include a much corroded copper dish (7282), two spear heads, three chisels, and a set of seven long oval vases (Pl. XXXV, *a*). Five of them contained one or two medium sized cylindrical vases, placed one over the other, and in each of these except one, was a similar miniature vase. One of the set contained only three miniature vases overlapping each other, and one was empty. There was nothing, however, to indicate their purpose.

Trench III on the same mound was expanded southwards. Near its centre two rooms were found last year and for some length outer walls of the same house have now been traced in that direction. Possibly there was a courtyard

[1] Some of the coins from Jhukar were found either in association with, or close to, terracotta sealings bearing characters undoubtedly of the Gupta period, approximately the 5th century A.D. For coins bearing crude human figure in "Kushān dress" see Cunningham, *Coins of Mediæval India,* Pl. VI, fig. 1 and Marshall, *A. S. R.,* 1912-13, p. 46 and Pl. XL, fig. 10 and 1914-15, p. 34, Nos. 41-44.

on the south. Other structures are too fragmentary to be described. Three interesting finds of pottery were made here: two near the centre and the third at the south-west corner 5′ to 7′ below the surface. The first consisted of three fragments of a painted jar (Pl. XXXV, *g*). The scheme of decoration as it survives, is in three registers separated from each other by double lines. The first tier consists of a deep wavy roll with the interspaces disposed by curvilinear chequered designs. The second is divided by broad uprights of lattice pattern into a number of compartments in which different trees are depicted. On one fragment, in the left hand compartment, are seen a doe in front of a plant suckling her young, ends of boughs of a tree with a seated bird, a cock, spider (?), fish and butterfly. In the right hand compartment, looking towards a tree is a man with left hand raised aloft and the right to his head, followed by a frightened child. It will be noticed that their hair stand on end. Both wear close fitting breeches. The rest of the space is filled by cocks and fishes. Of the other fragments, one merely depicts a tree, the other a tree, man and cobra (?). The little that remains of the third tier shows circumscribed lozenge patterns in imitation of smaller designs in shell.

The second find near the south-west corner consisted of a number of painted (Pl. XXXV, *b*) and plain vases, a toy bull, chert scraper, beads and fragmentary bangles. Among the painted vases are, one complete and seven fragmentary squat tapering vases, one complete and four fragmentary goblets and five cocoanut shaped vessels. Except two tapering vases and a goblet which had a green slip, the surface of the others was polished white. The decoration on polychrome ware was in green and red pigments over a white surface.

The third find (5630) consisted of pottery exposed in three layers in connection with a frail brick enclosure, of which only the western side survives. The topmost layer held only one large and badly crushed jar containing a pointed *lota*, 3 fragmentary cylindrical vases, some nodules and tiny pieces of bones. The intermediate layer yielded three medium sized *gharas*, two of which were badly crushed, four pointed *lotas* and an assortment of five cylindrical vases, toys, fragments of terracotta bangles, cakes, and potsherds. The well preserved *ghara* was full of unbaked clay tetrahedrons holed at each end, some of which had been crushed to powder. It also yielded a few tiny bones. Over the inverted bottom of this *ghara* was an animal rib and on the adjoining floor two beads and a faience sealing. The bottom layer contained a medium sized *ghara*, a squat pot, two pointed *lotas*, three fragmentary oval and four cylindrical vases, a cone, female figurine, pieces of triangular cakes, and sherds. The above *lotas* contained a terracotta bead and a curvilinear ivory baluster. In this connection it should be added that the intermediate layer was covered with porous ashy earth and bits of charcoal.

Two other finds may be mentioned, *viz.*, a fragmentary elephant seal and a biconical gold bead (Pl. XXXIV, *c*).

In order to allow of a wider area for deep digging in the northern portion of trench I on mound F, it became necessary to excavate on either side of the last year's deep digging. The western part gave a tiny paste seal depicting a couch-

ant hare, 12′ 6″ below surface, while further down on the eastern side, were found, at a depth of 21′ and scattered over a large area, hardened animal bones, one being the forepart of a skull with two horns. Under one of them lay an excellent seal of the *Brahmani* bull type. The animal has a prominent hump, well developed body and large dewlap. This is the only large seal yet found at such depth in this trench, only tiny seals of paste being usually met with at a depth below ten feet. Terracotta antiquities recovered between 18′ and 24′ are a small feeding vase with long spout, two other vases, a hollow flesh-rubber (7421), and two animal toys, in one of which the fore and hind legs are not separated from each other (Pl. XXXV, *e*). Finds of hardened animal bones were also made at three places in the southern extension of the Parallel Walls Area at depths of 7′ 4″, 15′ and 18′ to 19′ below the surface. The second and smaller collection consisted of charred bones lying over burnt earth, pieces of slag and a terracotta bangle. An important phenomenon observed in connection with the preservation of bones in mound F is, that they tend to become harder and less spongy when associated with a hard and impenetrable soil which becomes a deeper green as the depth increases. A sample of this soil was submitted for analysis to Mr. Sana Ullah, Archæological Chemist, who writes: "hardness in clays may be due to (*a*) metamorphic changes and (*b*) pressure. As no evidence of metamorphic changes was found, there is no doubt that the hardness of this stratum is due to the pressure exerted by the superincumbent layers of the earth. A direct proof of this is furnished by the fact that these clods have now become quite soft. The preservation of bones is evidently due to the stoppage of percolation of water through this highly compressed stratum ".

On mound A B the old pits I and II have been expanded into a large rectangle measuring 194′ from east to west and 137′ from north to south. In its south-west quarter were found, scattered here and there, large quantities of the charcoal of some coniferous trees and of bamboos and reeds and heaps of ashes. All over this area walls are very fragmentary. A few are of sun-dried brick and the rest, although of burnt bricks, are of poor construction. Here was also discovered, in hard earth, an irregular and shallow saucer-shaped depression, 11′ 6″ in diameter and 1′ 10″ deep, with a filmy coating of a slate coloured substance (Pl. XXXI, *b*). Its purpose is not apparent. Along the northern extremity of the gabled drain and gutter, referred to in the last year's report, a large portion was excavated to sink a deep pit for correlating various strata of buildings at this spot, but downward progress was hampered by the appearance of a number of brick floors and walls (Pl. XXXII, *b*).

Despite the above, spade work was more than fully repaid here by an important discovery of skeletal remains lying 10′ 10″ to 11′ 4″ below the surface, slightly east of the centre of its southern edge (below the shed in Plate XXXII, *b*). Three fragmentary human skulls and some other bones, a tubular bead of terracotta and fragment of a brazier-like object were found lying on a bed of hard earth in a somewhat defined enclosure 10′ 10″ from north to south and 9′ 11″ from east to west up to the broken end of the south parapet. On the

south and part of east, the enclosure is bounded by a dwarf parapet of single bricks laid lengthwise; while the ruined walls of a building of the fourth stratum which are not at right angles to the parapets supplied the remaining boundary on the east and north. Stratigraphical evidence leaves little room to doubt the great antiquity of these remains.

Skulls have been numbered 5440A, B and C, the two first roughly pointing to the south and the last to the north-east. Skull 5440A lay to south near the centre of the parapet and of this only the chin is preserved. Skull 5440B was lying on the right cheek and facing east. Immediately to its north, the lower jaw was lying detached, while 5440C was partially inclined on the left. Only a small fraction of other bones, mostly lying round skull 5440B, were recovered, but, except the lower jaw referred to above, none of them lies in its original position. It appears as though the corpses had been exposed and most of the bones carried away, some having dropped just south of the enclosure. Skulls, being at once the heaviest and most compact parts of the human body, were apparently dropped down in their present position.

Another find of great significance touching the disposal of the dead and consisting of a group of eleven burial jars was made a little south-east of Mound D, on the western edge of the cart road between it and mound E. The findspot is at a lower level corresponding with the level of the surrounding fields. One of these jars was exposed by rain in September, 1927, and three others were disclosed in the course of clearance. Of these, 3934A, which is the best preserved, contained nothing; B gave a clay ball, pebble and small ivory object with linear decoration; D was very fragmentary and C, of which only the lower half is preserved, contained near the bottom, 3 fragmentary human skulls and another bone with deep socket. Skull No. 1 (Pl. XXXIII, *d*) is better preserved while of numbers 2 and 3, one of which is in two pieces, little but filmy impressions are left. Early in February, 1928, an area of 24′×16′ was opened to a depth of over two feet and seven more jars (Nos. 7445A to G) lying about 3′ south of the jars referred to above (Pl. XXXIII, *a*) were disclosed. Their tops were only 3″ to 6″ below the surface and in height they varied from 9″ to 22″. Five were covered with lids, of which two had handles. Except jar 7435G which is broken, the others are well preserved and painted in the upper portion. The lid of jar C has a hole in the centre. Jars A, D and F have a flange below their mouth with holes at four salient points. Jars 3934A and B had similar flanges. Jars A, C, D and G are smaller than the other three. B and C have flat bottoms but D and G are globular. The largest jar E is flat bottomed and roughly pear-shaped. Smaller jars were turned complete on the wheel but the three large ones were separately made in two parts and joined near the middle.

Jars A, C and G contained fragmentary skulls and long bones, etc., of babies of various ages. No. G being uncovered and broken, the tender bones had been damaged by brick-bats (Pl. XXXIII, *e*). B contained an adult's skull more or less complete and confusedly mixed with other bones. D and F contained tiny pieces of babies' bones along with a few fragments of decayed

charcoal and potsherds. The largest, jar E, was empty. In every case bones were found near the bottom and the infilling consisted of soft earth. Smaller terracotta vessels such as pointed *lotas*, cylindrical vases, etc., or toys and cakes were conspicuous by their absence. A few fragments of pointed *lotas* and other sherds were, however, found near them. The way in which the bones lay pell mell at the bottom and the size and shape of the jars indicate them to be fractional burials. On the other hand skeletal remains from the enclosure on mound A B described above, suggest a clear possibility that one method of disposal of the dead was to expose a corpse and after some time to collect and bury the remnants in an urn.

These jars are remarkable not only for their contents but also for the novelty of their shape, and paintings (Pl. XXXIII, *b*, *c* and *f*). On jar 7435F the decoration consists of seated peacocks alternated by horizontal rows of wavy lines; on E seated peacocks are alternated by standing deer; on B there are three rows of flying birds separated by sets of wavy lines and trees; and on A rows of wavy lines alternating with trees. C and D are decorated with rows of wavy lines and stars which are common to all. The paintings are primitive, limited to wavy lines and crude realistic designs.

The extension of pits I and II on mound A B yielded other interesting finds. To the north of the enclosure containing human remains referred to above and scattered mostly over sub-squares $\frac{Q\ 24}{3, 4, 8, 9}$ were found numerous objects. Among them are, a tiny cylindrical paste seal inscribed on the circumference, top and bottom; a faience tetrahedron (4763), a tiny oval vase (4764); a cross-shaped bead (4556), an amulet (4846); a copper chisel (5187); a rod; a gold clasp, an ivory stilus (4896), a conch spoon, chalcedony *liṅga* (?) (4602), four-legged curry stone (4713) and a terracotta basin with straight edge (7140). From the rest of the trench also several noteworthy finds were made comprising two terracotta cylindrical bottles (Pl. XXXIII, *g*), a large plano-convex vase with narrow mouth (4391) and a terracotta spoon in imitation of a conch prototype (Pl. XXXIV, *f*); a double convex steatite bead with cross-shaped patterns on both sides; a faience leaf, conical temple ornament; a miniature perforated bottle (Pl. XXXIV, *a*); ivory comb (7038) and stiluses (4956); lead vase (6051), and a large flint weight (7168). In the western section of this trench two jars deserve special notice. No. 5919 which is a large inscribed jar was found thoroughly crushed in sub-square $\frac{P\ 23}{10}$ at a depth of 10 feet. Its contents comprised small pieces of animal bones, bits of charcoal, a toy bull's head. potsherds of a brazier, perforated and other vases, dishes, a fragmentary wheel and bangles and triangular cakes. About four-fifths of the jar contained porous earth mixed with some decayed cereal on which leaf-impressions were frequently traceable. The other jar (7765) was found in sub-square $\frac{P\ 24}{5}$ 9′ 5″ below the surface. Its contents were similar to those of the above jar, but in the porous earth a few seeds of the melon variety were found.

Across the lower mound D a north and south trench was dug measuring 150′×40′. It is shallow at the extremities but deep in the middle or highest

portion of the mound and was left unfinished as everywhere a filling of sun-dried bricks was encountered. The principal finds from this trench are three unicorn seals (3975, 4015 and 4079), a square bossed amulet incised with three rows of concentric circles, two small paste seals, one of which is triangular and the other rectangular. and stone and ivory chessmen.

Altogether 116 inscribed objects were found, namely, 48 seals of steatite with the unicorn type preponderating, 20 of paste, 5 of faience, 1 of clay, 35 sealings of diverse materials and seven potsherds. The sealings show several examples of *svastika* and cross patterns. The latter may be prototypes of the former. Other interesting finds include several faience objects (Pl. XXXIV, *c*), such as nose and finger rings, pendants, temple ornament and beads, a toy sieve and a perforated bottle, and an excellent collection of tiny vases some of which are also in terracotta (Pl. XXXIV, *a*). Ivory objects include a hair comb, spatula, stiluses, needles and chessmen (Pl. XXXIV, *d*), while among cherts, weights and an arrow-head are specially remarkable. Several smaller terracotta vessels have been found shaped like cocoanuts and a pomegranate; and a spoon and basket in imitation of a conch spoon and basketry (Pls. XXXIII, *g* and XXXIV, *f*). Other interesting vessels are cylindrical bottles with splayed necks, a glass-shaped vase, polychrome goblets and squat tapering vessels (Pl. XXXIII, *g*). Miscellaneous objects include several varieties of wheel and handmade vases, some potsherds with incised patterns, carts, waggons and saddles of terracotta (Pl. XXXV, *h*, *c* and *f*). Among male figures, one carries a duck, the other is nude and the third is in the attitude of adoration. Two women have flowery head-dresses and the third has tresses over the shoulders and then doubled and tied behind the head (Pl. XXXV, *d*). Animals comprise a woodpecker, a hound carrying a hare, a dog and other toys to which separate heads could be attached and some figures of birds.

A number of small cones of stone, faience and terracotta were recovered this year. They have round tops and flat bottoms, those in terracotta being somewhat pointed and holed at bottom. No. 4264 which is in faience is at once peculiar and more significant for it resembles a free standing miniature *liṅga*. Cones with round tops are certainly miniature representations of larger prototypes in stone, two examples of which were obtained from mound F in the years 1924-25 and 1926-27. It appears quite possible that all these were cult objects of phallic worship.

Mounds at Harappa have now been excavated to an extent which enables a fair idea to be formed of their remains and minor antiquities. It would be desirable to concentrate attention in future exploration on the low-lying areas south of mound D and the *Thana* mound. The present discovery of burial jars below the level of fields should lead to vigorous examination of these areas where it is possible that new finds may add to our knowledge of this culture.

In all Rs. 15,000 were granted for continuing exploration of the ancient mounds at Harappa. Of this sum, Rs. 700 were transferred to the Civil De-

partment, Punjab, to meet the cost of land acquired for the construction of a combined godown and Archæological Rest House at Harappa, the remainder being fully utilized in connection with the excavation and treatment of antiquities.

THE SALT RANGE.

By Mr. Madho Sarup Vats.

At the instance of His Excellency the Governor of the Punjab the remains on the southern shore of the KHABAKKI LAKE were examined on the 21st and 22nd September 1927. Khabakki lies in the Khushab *tehsil* of the Shahpur district and can be reached from Khushab railway station on the Malakwal-Kundian Section of the North Western Railway. The distance from Khushab to Kathwai is 15 miles, which it will be possible shortly to traverse by motor. Khabakki is only 12 miles due north of Kathwai. All along the southern shore of the lake there is a series of over twenty platforms built of squared stone extending over a mile and half (Pl. XXXV, *j*). Fifteen of these lie south of the road from Khabakki to Naushahra and the remaining in two groups between it and the eastern and western extremities of the lake. The former group is scattered over seven-eighths of a mile and stands higher up towards the foot of the hill, but the extreme groups are on the level of the surrounding fields. The larger group is, on the whole, better preserved, but not so well as those at Khura and Sabrai referred to below. The best preserved survive in three to five courses, of the others only one or two courses remain. It is possible that some platforms have already entirely disappeared. Their size varies from 6′ 9″ ×5′ to 41′×24′. No. 9 is 9′ 3″ square, but the others are all rectangular. Platforms 1, 7, 9, 11 and 12 were examined by sinking four feet vertical shafts in the centre. The former two were dug to 6′ or sufficiently below their foundation, No. 9 to 4′ and 11 and 12 (Pl. XXXV, *j*) to 2′ 6″ and 5′ respectively. Nothing was found in the former three, but the latter two had to be abandoned at that depth as in each case a Muhammadan burial laid north and south was uncovered. It may be added that almost on the existing surface of platform No. 7 just north of the shaft a similar burial was found. On one of the platforms near the eastern extremity of the lake and close to the village of Khabakki a Muhammadan saint is entombed.

On the southern shore of the UCHHALI LAKE which lies about 17 miles west-south-west of Khabakki is a group of five platforms. Each survives in a single course, and their sizes vary from 24′ 3″×16′ 8″ to 54′ 3″×23′ 2″.

Of all platforms seen during my visit to the Salt Range those at KHURA and SABRAI are the best preserved. Khura is situated four miles north of Kathwai, and here in 1888 in its ruins was found a Gupta inscription incised in the reign of Toramāṇa Shāha Jaūvla recording the construction of a Buddhist monastery by one Roṭa Siddhavṛiddhi for the teachers of the *Mahīśāsaka* school.[1] Two of the three platforms stand on the western edge of the road to

[1] *Epigraphia Indica*, Vol. I, pp. 238-241.

Bhukhi and the third on a hillock to east. One of the former, the only example of its kind, is built of *khangar* stone identical with the *kanjur* of Taxila. It is invested with greater local sanctity and measures 25′ 8″×19′ and is 6′ high. The platform on the hillock is 22′ 4″×9′ and about 3′ high. At Sabrai which is only about a mile south-west of Naushahra there is but one platform on a hill-top south of the village. It measures 24′ 5″×18′ 10″ and is 8′ 4″ high, being constructed of gray stone in the lower portion and white in the upper. It is locally known as Panjpir and has six graves on it. This too is held in veneration.

All these platforms are built of dry masonry and only one course deep, the interior being filled with earth. In each case the foundation course is embedded about 6″ in the ground and projects about that much from the rest of the superstructure.

At Khabakki where platforms are more numerous, tradition asserts that they are Buddhist tombs. It was reported that several years ago a platform was dug into and a stone or terracotta vase containing a bone and a copper coin found, but these can no longer be traced. No antiquity was found in the shafts sunk on this occasion. According to the *Shahpur District Gazetteer*, p. 31, such platforms may be seen on the road from Kathwai to Sakesar, and they are reported to extend eastwards to Kallar Kahar in the Jhelum District and westwards to Sakesar.

In the absence of definite evidence it is difficult to suggest the precise object of these platforms, but, as pointed out in the *Gazetteer*, it is not impossible that they may have been tombs of the Hindu or Buddhist period. They are apparently different, alike in size and fabric, from the rude cairns[1] at Khera and Satmas in the Agra District. In several parts of Rajputana, *samādhis* of chisel-dressed stone, bearing foot-prints on the top slab in the centre, are quite common. Below the slab with foot-prints lie bones or ashes of the sage. But usually the length of *samādhis* does not exceed 10′. In the present condition of platforms at Khabakki and elsewhere it is impossible to say how their tops were finished.

MONUMENTS IN THE PUNJAB AND NORTH WEST FRONTIER PROVINCE.

By Khan Bahadur Maulvi Zafar Hasan.

City Wall of Multan.

The city wall of Multan is said to have been built by Prince Murad Bakhsh, the youngest son of the Emperor Shahjahan. It is constructed of burnt bricks in mud, the facing courses to a depth of 9 inches being, however, laid in lime mortar. It is now in a ruined condition and His Excellency the Governor of the Punjab, seeing that it will ultimately disappear, expressed an opinion that a portion of it at the south-east corner of the city should be preserved. In

[1] Cunningham, *Archaeological Survey Reports*, Vol. VI, pp. 13-15 and 33-39, and Pl. II.

the month of January 1928 Khan Bahadur Mian Wasiuddin, the Officiating Superintendent of the Frontier Circle, inspected the portion in question to suggest measures for its preservation. The portion proposed to be preserved includes the Khuni Burj, by which the British entered the city after the siege, its adjoining walls to the next bastion on the north and as far as the outlet serving as a combined entrance and drain on the west (Pl. V, *d*). The Burj contains a miniature shrine dedicated to an innocent life, said to have been immolated to give stability to the structure. Proposals for the conservation of the Burj and the lengths of walls mentioned above have been submitted to the Director General of Archæology in India and will be carried into effect as soon as these structures are brought under the operation of the Ancient Monuments Preservation Act.

Tomb of Rai Ram Dev Bhatti at Batala.

The tomb of Rai Ram Dev Bhatti at Batala in the District of Gurdaspur was visited by the Superintendent in response to an application made by a local gentleman to the Deputy Commissioner, Gurdaspur, requesting that it might be repaired and maintained as an ancient monument. It lies about a mile to the south-east of the town and consisted originally of a domed compartment, constructed of brick masonry coated with plaster. It is now in a ruined condition; the dome has collapsed, and the building is filled with its débris which entirely covers the grave if such exists. The school, mosque and reservoir said to have been erected adjacent to the tomb are not traceable, the land all around the latter being thickly cultivated. The building is in an advanced stage of decay, and its preservation as a central protected monument cannot be recommended.

Rai Ram Dev, after whom the tomb is known, was a Bhatti Rajput from Kapurthala. He has been noticed in the *Khulasatu-t-Tawarikh* as the founder of Batala, but curiously enough there is no mention of his tomb, although the author, who lived during the reign of Aurangzeb, was a resident of that town, and has described the important buildings existing in his time there.

Kos Minars.

A survey of Kos Minars was made in the Districts of Rohtak, Gurgaon, Karnal, Ludhiana and Jullundur and not less than 62 of them were inspected. Site plans indicating their relative positions were supplied by the Public Works Department, but there were several inaccuracies which have been rectified. Notes regarding their repairs have also been drawn up, and as the control of Archæological Monuments in the Punjab has now been transferred to this office, the work will be undertaken departmentally. It is to be regretted that the whitewash applied by the Public Works Department to these monuments has marred their appearance.

Roshnai Gate and its adjoining buildings at the Hazuri Bagh in Lahore.

A proposal was made by the Punjab Government to make over to the Archæological Department the Roshnai Gate and its adjoining buildings at the

HAZURI BAGH in Lahore. The Hazuri Bagh is said to have formerly been a *serai* attached to the neighbouring mosque, constructed by the Emperor Aurangzeb and locally known as the Badshahai Masjid. It was surrounded by a series of arched compartments, those on the north, south and west being double-storeyed, while the eastern compartments against the west wall of the fort consisted of a single storey only. Entrance to the *serai* was gained through two gateways on the north and south, of which the finer one on the north is called the ROSHNAI DARWAZA. The *dalans* at the north-east and south-east corners have disappeared and those on the west, forming part of the mosque, and a few at the north-west corner have lost their upper rooms. The compartments on the upper storey of the south wing are now occupied by the boarding house of the Oriental College. In order to make them habitable a verandah has been added to the front and windows pierced in the back wall. The upper rooms of the Roshnai Gate also are used occasionally for residential purposes, and they with the lower compartments have undergone such additions and alterations that it is difficult to determine their original arrangement.

The gates and the compartments attached to them are in a dilapidated condition and the Punjab Government are of opinion that these buildings, being an integral part of the Hazuri Bagh, should be properly maintained in keeping with the aforesaid garden and the adjacent structures—the fort and the Badshahi mosque. The conditions on which they are proposed to be transferred to the Archæological Department are as follows :—

(1) that the buildings should be declared protected under the Ancient Monuments Preservation Act;

(2) that the cost of their preservation and maintenance be a charge on the central revenues;

(3) that the existing thoroughfare through the gate shall not be closed to vehicular or other traffic without the previous approval of the Local Government.

The proposal is acceptable to the Archæological Department, but the question of taking them over has been postponed for the next two years. The Deputy Commissioner, Lahore, through whom the offer was made, has been informed accordingly, and it is gratifying to note that the Local Government are arranging in consultation with the Archæological Department to execute necessary structural repairs to the buildings in order to render them safe until their transfer to this Department.

RANG MAHAL AT WALAI, PESHAWAR DISTRICT.

The Deputy Commissioner, Peshawar, directed attention to a small country lodge of the Mughal period in the WALAI GARDENS some five miles south of Nowshera, enquiring whether it would be feasible to have it declared Protected. The monument had already been visited by Khan Bahadur Mian Wasiuddin and a brief description of it will be found on page 17 of the *Annual Progress Report of the Archæological Survey, Frontier Circle,* for the year 1918-19. It was inspected again by Mr. Hargreaves on May 6th, 1927.

The lodge lies about half a mile distant from the village and near the wide bed of a broad and usually dry Nala. The country is barren and stony, but springs water the garden and make the spot surprisingly green and pleasant and in such marked contrast to its surroundings that the place has acquired some local celebrity. The monument is a garden house of the Khattak Khan, and from its painted ornament is known as the RANG MAHAL. It is an unpretentious building some 70 feet by 25 feet having in front a low platform with a small square tank. The structure is of local undressed stones set in thick lime mortar and plastered, the arches and roofs being constructed of *Lakhauri* bricks. In front is a central arched opening with two semi-domed entrances on either side and narrow staircases in the end walls, giving access to the flat roof. Inside are three rooms, the largest and central one having a flat arched brick roof and half dome with lotus ornament at either end. The smaller end rooms have flat arched brick roofs. The present pavement is of modern square tiles. Below are *tahkhanas* into which water has percolated from marshy land at the back of the building. Here and there in the rooms are traces of a dado of polished plaster with red panels and green border. The upper parts of the walls and domes have painted floral ornament, well preserved in some of the half domes. This ornamentation appears to be of two periods, the better in a reddish colour apparently 18th century work, the inferior in green and yellow of little merit and comparatively recent.

The building is fairly well preserved but the back wall of the central chamber has subsided a little on account of percolation, and there is a noticeable crack from the ground to the roof. In the field in front of the monument and which was formerly the garden of the lodge are traces of the stone and plaster water channel which carried away the water of the little tank referred to above.

The monument is not of sufficient historical or architectural importance to warrant its maintenance by the Central Government. Muhammadan monuments of even the 18th century are, however, rare in the North West Frontier Province, and it has been proposed that the local Administration should maintain it from provincial funds.

MONUMENT AT PALOSI PIRAN NEAR PESHAWAR.

At the instance of the Deputy Commissioner, Peshawar, Khan Bahadur Mian Wasiuddin inspected the monuments at PALOSI PIRAN near Peshawar. The monuments which lie to the north of the village are three in number, *viz.*, (*a*) The Tomb of Shaikh Imam-ud-Din, a saint of the Qadria order, (*b*) a mosque and (*c*) an unknown tomb.

The tomb of Shaikh Imam-ud-Din is constructed of brick masonry and measures 94 feet square. It resembles a terrace, some 6 feet high, with its central feature a dome rising prominently above it. Each of the four corners of the building is strengthened by a bastion. On the south are two compartments with an entrance in the centre. Internally there is a pair of compartments on either side of the passage, leading from the entrance into the central chamber which is surmounted by the dome. The central chamber, which rises

from the ground level, is square in plan, and has on each of its four sides an arched recess, which treatment is also repeated externally above the top level of the terrace, where a door opening with a superimposed window is pierced in the back wall of each of the recesses to admit light and air. Stone *jāli* screens seem to have originally been provided to the openings, but they have all disappeared, and been replaced now by earth fillings. Inside the chamber are some eight graves in a dilapidated condition. A flight of steps on either side of the entrance gives access to the top of the terrace, which is overgrown with jungle.

The local *Pirs*, who claim their descent from the saint, have in their possession an inscribed marble tablet said to have belonged to the tomb of Shaikh Imam-ud-Din. It records that the Shaikh died in the year 1060 A. H. (1650 A. D.) and that the foundation of his tomb was laid down in the year 1063 A. H. (1653 A. D.) by the order of Shaikh Abdu-r-Razzaq, Shaikh Abdul Haq, Shaikh Mohammad Fazil and Shaikh Abdul Wahid, and the building was completed in the year 1069 A. H. (1659 A. D.) under the supervision of Haji Iskandar and Ustad Fateh Muhammad.

The mosque stands immediately to the south-west of the tomb of Shaikh Imam-ud-Din and seems to have been originally attached to it. It is also constructed of brick masonry and consists of three arched and domed compartments. To the east of the prayer chamber is a courtyard now in a ruined condition, while the wall surrounding it has partly disappeared.

The unknown tomb lying to the west of Shaikh Imam-ud-Din's tomb is of no particular interest. It is covered by a Bengali dome and contains two graves.

Recommendations for the protection of these buildings were made to the Director General of Archæology, but as the owners did not express their willingness to execute an agreement in respect of their maintenance no action could be taken in the matter.

ALLAHABAD FORT.

By Mr. Madho Sarup Vats.

At the instance of the Director General of Archæology in India the ALLAHABAD FORT was visited on the 7th June 1927 in order to examine a stone lion and other capitals lying near the Aśoka pillar. The stone lion, crowning the pediment of the Infantry Detachment Mess, is a very conventional and degenerate sculpture and has nothing to do with the Aśoka pillar. The lion is 2′ 4″ high and stands on an oblong pedestal (1′ 11″×11½″×5″) rounded at the ends and having a hole in the centre for a dowel. The mane, whiskers and muscles are represented by stencil like carving. The ribs of the body are indicated beneath the skin and the animal appears as if famished. The sculpture is insignificant and the style and technique decadent.

In the garden in which stands the Aśoka pillar are now lying two abaci, a cone with an iron bar and the fragment of a slender pillar. The latter two are

of no interest. One of the two abaci (Pl. XXXI, *a*) which is relieved by a graceful scroll of alternate honeysuckle and lotus over a beaded astragalus appears to have formed part of the pillar, but as the bell portion is missing it is now impossible to refix it. The abacus is similar to that of the elephant capital at Rampurva in the Champaran District.

The other is a fine abacus relieved by lotus petals. Its diameter is 28″ and height 13″. The central hole is splayed and has a maximum diameter of 11″, but it is hardly possible that this also formed part of the pillar, though in point of date it cannot have been very far removed from it.

EXCAVATIONS AT SARNATH.

By Rai Bahadur Ramaprasad Chanda.

The excavations carried on at SARNATH from the 20th February to the 31st March, 1928, were confined to the area on the west of the old boundary wall that stands 44′ due west of the Aśoka pillar (Pl. XXXVI, *a*). This wall was cleared by Mr. Hargreaves in 1914-15. About 10′ west of this wall Mr. Hargreaves discovered the foundations of an apsidal building 82′ 6″×38′ 10″ with the apse towards the west. Taking the dividing line between the undressed and the polished portions of the Aśoka pillar (8′ below the bottom of the edict) as the level of the ground in the Mauryan period, the foundations of the apsidal building lie 1′ 7″ above that level. Mr. Hargreaves, therefore, ascribed the building to the late Mauryan period. To the south of the apsidal building site an area measuring 50′ from north to south and 70′ from east to west was excavated leaving intact the foundations of a group of later Mediæval stūpas visible on the surface. In this south-western area digging was carried down to a level 2′ above the Mauryan level, but revealed no structure of any importance. But within a layer at the bottom 18″ thick, that is to say, between 2′ and 3′ 6″ above the Mauryan level were found a few interesting cast copper coins. One of these is a round coin with the Brāhmī letters '*ra*' and '*sa*,' assignable to the 1st century A. D., above a wavy line on the obverse. The symbol on the reverse of this coin is defaced (Pl. XXXVII, fig. 1). Another is a copper coin of Huvishka. The obverse shows the king leaning back on a four-legged throne with the right knee tucked up. There are only very faint traces of the legend. No trace of any legend or figure or symbol is left on the reverse (Pl. XXXVII, fig. 5). Two square (called 'rectangular' by Vincent Smith) cast copper coins have also been found. On the obverse of one which is in a fair state of preservation (Pl. XXXVII, fig. 2) is a tree within a railing, a cross and a three-peaked mountain with crescent at the top; on the reverse, apparently within a railing enclosure is an elephant and a triangular-headed symbol. A coin of this type has also been found in the north-western area 1′ 8″ above the Mauryan level and another on the site of the apsidal building 1′ 3″ below the Mauryan level. Both obverse and reverse of the former coin have a different arrangement of the symbols (Pl. XXXVII, fig. 3); on the obverse, a tree within a railing, a crescent-topped three-peaked mountain, a form of taurine, a triangular-headed post;

on the reverse, an elephant, a *svastika*, a triangular-headed post, a cross. All these square cast coins should probably be assigned to the Śuṅga period. To the same period or to a somewhat later date may be assigned another round copper coin found in the north-western area 3′ above the Mauryan level (Pl. XXXVII, fig. 4). On the obverse of this coin is a lion standing, and on the reverse, a tree within a railing and other indistinct symbols.

I excavated the open space within the remains of the walls of the apsidal building and of other later structures to a depth of over 4′ and here a few inches below the Mauryan level (Pl. XXXVI, *b*) found a few fragmentary earthen jars, a small earthen jar in perfect state of preservation turned upside down, and a few bricks. On further digging it was found that these bricks formed part of an irregular stack of fragmentary bricks, the base of which lay 34″ below the Mauryan level. These bricks are well-made and well-burnt, but no complete specimens were recovered. On an average they measure 9½″ in breadth and 3¾″ in height. From a comparison with bricks of analogous breadth and height found elsewhere, it may be said that these bricks must have been 19″—20″ in length. Their position indicates that there must have been some brick building in the western area in the Aśokan period.

In the foundations of the apsidal building two different types of bricks were recovered, one as well-made and as well-burnt as the above, average 19½″×9″×3¾″, another rough and ill-burnt measures on an average 19″×11″×3½″. The well-made and well-burnt bricks are rightly assigned to the Mauryan period. The inferior bricks and the apsidal temple should probably be assigned to the Śuṅga period, and the Mauryan bricks used in constructing its foundations probably belonged to older structures.

To the south of the foundations of the apsidal building, 6″ above the Mauryan level, was found the lower jaw of a young elephant. As no other part of the skeleton of the animal was traceable in the area, it is difficult to say how it came to be buried there.

To the north of the apsidal temple an area measuring 75′ from east to west and 50′ from north to south lying to the south of building No. 23 on the site plan was also excavated and 3′ below the level of the base of building No. 23 and 4′ 6″ above the Mauryan level were found the concrete bases of two walls at right-angles to each other and occasional bricks. These walls are 6′ 3″ broad and probably served as boundary walls. The bricks of building No. 23 measure on an average 15″×9½″×2½″, but bricks of these walls measure 18″×11″×2½″. Excavation in the area enclosed within these walls revealed the lower terrace of a stūpa measuring roughly 8′ square and 1′ 8″ in height. The base of this stūpa lies 2′ 8″ above the Mauryan level. The bricks of this stūpa measure on an average 18″×11″×2½″. A pit was dug inside the stūpa terrace, but no relic casket was found. Behind the stūpa above the bank of earth is visible building No. 23, and to the east and south, the bases of the two walls. The alignment of these walls is not parallel to the sides of the terrace of the stūpa, so they must have been built when the stūpa was in ruins. About 18′ 4″ to the west of the stūpa I struck the lower part of what appears to be the north-western

boundary wall of the site. Of this wall which is 10′ broad, 49′ 4″ of its length on both sides was cleared. It seems to extend in the north beyond this limit. The base of this wall is 2′ above the Mauryan level, and its bricks measure on an average 16″×10″×2½″. Below the base of the stūpa and to the west and north of it we found remains of walls made of well-burnt and well-made bricks of the Mauryan type measuring on an average 19″×9″×3½″-4″. The bases of these walls lie about 9″ above the Mauryan level. Plate LIV, *a* gives a view of the square terrace of the stūpa, the north-western boundary wall and remains of walls of Mauryan bricks from the north-east. These last walls should probably be assigned to the later Mauryan period and the stūpa and the north-western boundary wall to the Kushān period.

Among the antiquities found in the north-western area a terracotta female head (Pl. XXXVII, fig. 7) deserves special notice. It was found below the base of the north-western boundary wall 6″ above the Aśokan level. The fine features and the graceful pose of the neck with the head slightly inclined towards the right show that it must have been modelled at a time when Mauryan art was at its zenith. Other notable objects found in course of the excavations are fragments of shafts of octagonal pillars, of capitals of pillars, and of human figures with Mauryan polish (Pl. XXXVII, Fig. 6) resembling those that were found in such large numbers by Mr. Hargreaves in 1914-15. A row of octagonal pillars with Mauryan polish probably adorned a *chaṁkrama* or path of exercise at Sarnath erected either by Aśoka, or, more probably shortly after him. Further exploration of the Mauryan and Śuṅga strata of the western area of Sarnath is necessary before anything final may be asserted about these very interesting fragments.

EXCAVATIONS AT NALANDA.

By Mr. J. A. Page.

The site of the Buddhist monastery-city under excavation at NALANDA in Bihar has been described in previous reports. It will suffice here to recall that the remains comprise a long continuous range of monasteries along the east side, a corresponding range of detached stūpas along the west, and a couple of connecting monasteries to bound the area on the south. Down the centre of the area runs an approach avenue, entered upon, it would seem, from the north. The period embraced by the remains is between the 6th century and the 12th; and the outstanding characteristic of the site is the remarkable succession of structures that have been built and rebuilt on the ruins of earlier ones—a feature that greatly complicates their excavation and repair.

In continuing the excavation of the Nalanda site an allotment of Rs. 16,000 was spent in full during the year under review.

MONASTERY SITE No. I.—The remaining excavation necessary to complete the investigation of this site was carried out during the year. As has been explained in previous reports this monastery contains in itself no less than nine different levels of occupation, and these levels fall into two main groups,

and with the aim of making this succession of levels as intelligible as possible to the visitor, the upper group is being preserved over the northern half of the monastery area and the lower over the southern half. Three cells at the south-east corner of the monastery remained to be opened up to the lower levels to complete this scheme, and this has now been done (Pl. VIII, *a* and *b*).

With a view to retrieving any minor antiquities beneath the higher, later levels preserved over the northern half of the monastery, this half was excavated right down to the earliest stratum along the verandah and in the adjoining cells, and numerous antiquities were recovered principally from the Devapāla level, which is the third from the bottom. Very little, however, was forthcoming from the two earlier levels.

Similar excavation was also done from the Devapāla level downwards in the cells over the corresponding southern half of this monastery, where the three earliest levels are being exhibited, but with equally disappointing results. Indeed, the only antiquities recovered throughout the monastery from these pre-Devapāla levels were a few pieces of crystal, a broken knife blade, an ink pot (?), a yard long iron rod with crooked end, some six hundred cowrie shells, a few terracotta beads and tiny pots, and a terracotta die impressed with two representations suggestive of "Chinese clouds." We have, however, the satisfaction of knowing that the site has now yielded all the antiquities it held for us. The reason for the abundant yield of fine antiquities of the Devapāla period[1] lies in the sudden destruction of the monastery in a great conflagration, as is evidenced by the masses of vitrified concrete débris and the fused brick wall-surfaces that were revealed at this level. The fleeing occupants were in too great a hurry to think about their possessions, and these were left behind. With the earlier monasteries, however, the ruin was not accompanied by any such overwhelming disaster, and the monks were able to retrieve their belongings; their gain has been our loss.

When the excavation of the higher northern half of the monastery had been completed, the earth so removed was dumped back again to make up the higher levels that are to be preserved on this side.

MONASTERY SITE No. 6.—The bulk of the excavation done this year has been at monastery No. 6, where the whole of the great mass of earth and débris that filled the central courtyard has now been removed, two-thirds of it during the current year. The cells and the verandah along the east side and a couple of adjacent cells on the north side which remained to be excavated have also been cleared, the excavation generally being taken down to the topmost level of occupation; for here, again, earlier levels of occupation occur, as revealed in trial pits sunk to the foundations. The level exposed appears to be contemporary with the Devapāla monastery in Site No. I adjacent; and the whole of this level has now been cleared (Pls. X, *a* and *b* and XL).

[1] Two such antiquities in bronze, one a votive stūpa portraying life-scenes of the Buddha, and another an 18-armed image of Tārā, found last year and cleaned by the Archæological Chemist in the year under review are illustrated in Plate XLIV, *a* and *b*.

The excavation of the courtyard has revealed its original brick pavement, inset in two places towards the middle by long rectangular cooking *chulhas;* and the low remains of two subsidiary shrines have also been exposed, centrally in the north and south sides of the courtyard and some two feet clear of its verandah parapet.

The clearance here was instrumental in providing further evidence that these Nālandā monasteries, of the Devapāla period at any rate, were more than one storey high; for close to the concrete parapet on the north side of this Devapāla monastery and at a level some 2 feet 6 inches higher than its stone column bases *in situ* was found another stone column base that could only have fallen from above when the upper verandah structure collapsed *in toto.* As in the corresponding Devapāla monastery in Site No. I the destruction of this monastery was brought about by a devastating fire, clear evidence of which exists in the large quantities of charcoal and the vitrified brick surfaces that have been found here.

In the previous report the surmise was offered that the columns that supported the upper storey verandahs of these Devapāla monasteries were of wood rather than stone, since the use of timber would have facilitated the construction of these verandahs and, again, would largely account for their wholesale collapse in the great fire that consumed them. Evidence of the accuracy of this surmise has now been forthcoming in the fragmentary charcoal stumps of actual columns that have been found *in situ* along the verandah parapet particularly along the north side of the monastery. These wooden columns were set up on stone bases and their feet enclosed by the concrete top of the parapet; and the square holes left in the concrete top through their destruction are clearly defined, revealing the columns to have been 1′ 10″ or so square.

Besides the excavation described above, the west frontage of the monastery range from the entrance of Monastery No. I to the end of Monastery No. 6, was cleared down to the Devapāla level, the width of the clearance averaging about 30 feet. The corresponding east frontage of this range was also cleared down to the same level and over the same distance, the width of the clearance here averaging some 12 feet.

MONASTERY SITE No. 7.—Work on the excavation of this monastery, which is the fifth from the south in the eastern range, was commenced and the topmost level of occupation has been cleared. This topmost stratum, which appears to be the next subsequent to the Devapāla structure below, lay unusually near the surface, an average of only some 2′-0″ of earth requiring to be removed to expose it. This, however, has not been without its disadvantages, for the nearness of the remains to the surface had led to their exploitation by the local people for bricks in early days before the Archæological Department took over the site. But though the walls of cells and verandahs have largely been dug away, it is still possible to trace their former positions by the edges of plaster paving that once adjoined them; and by this means the outlines of much of the walls have been recovered. The monastery conforms to the usual

monastery plan, with a central quadrangle enclosed by a verandah backed by cells on all four sides, the entrance gateway being centrally in the west side and the sanctum centrally in the east. In scale it is as large as Monastery No. 6 contiguous to it; but present indications suggest that it was somewhat of a makeshift structure, in which broken columns retrieved from elsewhere have been turned over on their sides and used to serve as thresholds, a noticeable case of this being at the main shrine. In accordance with the customary procedure a certain area of this stratum will be removed to expose portions of the earlier levels below. of which traces have already been revealed through exploratory trial pits.

STŪPA SITE NO. 3.—The excavation of this stūpa was practically completed in the previous year, when evidence of no less than 7 stūpas, one erected over the other, was disclosed, as has been described in the last report. Operations here this year have aimed at rounding off that work; and the shattered core of the fifth stūpa façade in the sequence, as exposed along the east front, has been cut back, along with the later débris that covered it, to expose to view more of the fourth stūpa behind it (Pls. VII, *a-d*, XLI, XLII and XLIII).

The two corner-towers of this fifth stūpa façade were exposed last year; and in the present year the top of the corresponding N-E corner tower was revealed by cutting away the later "boxing" walls that had been erected around it when this fifth stūpa was enlarged to form a sixth. This corner tower was much ruined towards the top, and clearance of the superincumbent débris revealed a square chamber inside with deep niches in each internal face and a little doorway for access in the east side. The little tower chamber was carefully cleared with an eye to possible relics, but it yielded nothing, and excavation for some 15 feet down through its floor revealed nothing beyond solid brick hearting. No relics of any kind have been forthcoming from this great stūpa mound with its sequence of 7 stūpas inside; and one can only suppose that any that might have been deposited there were considered of sufficient sanctity and importance to instigate their recovery from the ruins each time a stūpa was destroyed.

The area immediately south-east of this stūpa mound was also excavated up to the boundary of the site, and earlier levels of the many little votive stūpas in this position were brought into view. As remarked earlier in this account, building and rebuilding on the ruins of a previous structure is the outstanding characteristic of these Nalanda remains, and is exemplified even in the smallest votive stūpas erected by pious devotees around the main stūpa shrine.

At the north-east corner of the main stūpa the pavement of the seventh (and latest) level of occupation had been exposed some years previously. About a third of this area has been excavated in the year under review to expose a portion of a long wide *chabutra* projecting from the north front of the 6th stūpa; a portion of the contemporary paving contiguous to this *chabutra* has also been exposed, this occurring some 6 feet below the seventh stūpa paving.

In this area an original drain, curving in an ogee shape in plan, was uncovered along with the low remains of a contemporary wall in front of it, which

appears to have been the face wall of a *chabutra* through which the drain ran. The level of this structure indicates that it belonged to the seventh stūpa in the sequence. The excavation of the stūpa mound has been taken down to the earlier fifth level stūpa in this area, and in the construction of a new drain to carry away surface water the old curving drain at the higher seventh level has had to be cut through. The two severed portions of it, however, are being preserved. The continuation of this old seventh level drain has been traced to its outlet away to the east beneath the enclosure wall of the seventh level stūpa. The new drain is being paved over to complete the original paving at the sixth level in the sequence, and access to the stūpa mound will be gained over this paving along the course of the drain, through a wide passage that has been cut between the remains of the higher seventh level structures that rise on either side of it.

A description of some of the more interesting finds of minor antiquities made on the Nalanda site during the year is given below under "Museums (Nalanda)".

EXCAVATIONS AT PAHARPUR.

By Mr. K. N. Dikshit.

The excavations at Paharpur were continued during the year under report from the point where they had been left last season and besides the complete exhumation of the central mound (Pl. XLV), a large area on both sides of the North Gate buildings was opened out (Pl. XLVI, *a*). The close of the season of 1926-27 had seen the uncovering of the entire basement of the shrine and a large portion of the first terrace verandah on all sides. During the year under report the second terrace verandah and the pillared halls and chambers behind them at all the cardinal points were laid bare. The plan of the second terrace was already apparent from the progress made during the first two years, when a part of the northern verandah or circumambulatory passage and the pillared hall and antechamber behind it were excavated. The symmetrical plan of the structures exposed on the basement and first terrace justified the expectation that similar pillared halls and antechambers must have existed on the south, east and west. This anticipation has not only been fulfilled by the season's excavation, but further valuable results throwing important light on the history and vicissitudes of this stupendous monument were gained. Thus in clearing the floor of the passage on the north-east, a corroded oblong copper-plate was discovered, which, as will be seen below, has given a very important starting point for the investigation of the problem of Paharpur. The circumstances in which it was found, lead to the presumption that it was preserved among the archives of the temple in its latest phase of existence as the great Buddhist Vihāra of Dharmapāla, although the plate predated the pious Pāla emperor by over three hundred years. The south-west passage yielded a number of stucco heads and fragments of stucco decoration, which must have formed part of the decorative scheme of the walls, along with ter-

racotta plaques and stone sculptures. The stucco heads show considerable artistic skill (Pl. XLVIII, *f*, *g* and *h*) and can be considered to be the first specimens of this branch of plastic art to be recovered in Bengal. The stone pillared halls on the east, west and south conform to the general type of the northern hall, but differ in particulars of dimensions. The bases of only two pillars were recovered in the south hall, while in the east all the four pillar bases and capitals have been discovered. The western *maṇḍapa* has four pillar bases, in one of which the lower piece is a fragment of an older pilaster or door-jamb with beautifully carved "pot and foliage" and "geese with necklace" ornamentations, easily recognized as late Gupta work (Pl. XLVI, *d*). No shaft of a pillar was discovered in any of the three *maṇḍapas*, exposed this year, although the northern *maṇḍapa* excavated in 1925-26 yielded two inscribed pillars, one referring itself to the reign of Mahendrapāla. There is a volume of evidence now in favour of the hypothesis that an earlier structure which existed on the site itself during the 6th-7th centuries was demolished and its materials utilized in the construction of the pillared halls and antechambers at a later date most probably by the Pāla Emperor Dharmapāla. The floors of the small rooms or antechambers behind the southern, eastern and western halls were dug into and found to be filled with a good number of well-dressed stones of large size, used for architectural purposes, some being distinctly recognizable as door-jambs. A female figure with a fly-whisk in her hand, occupying the bottom of a large door-jamb must have occupied the right hand corner of the entrance to a temple. The walls and floors of the *maṇḍapas* or pillared halls similarly exhibit signs of having been renewed or rebuilt at successive periods. At least three different levels of consolidated concrete floors are traceable in the western *maṇḍapa*. The floor of the verandah or circumambulatory passage on the second terrace also showed signs of three periods of rebuilding. On the south-east, the terraced floor of the verandah is still intact, for over a length of 50′.

On the farther side of the circumambulatory passage, opposite the *maṇḍapas*, there are projections at all the cardinal points on the second terrace. On the south and east these projections are enclosed by a blind passage on three sides. As there is no bond between the walls of the verandah and those of the projection, it is obvious that they are additions. In fact, the absence of any door opening and floor indicate that these additional apartments were not intended to serve any purpose save that of enlarging the plan and broadening the base commensurate with the height.

The operations above the second terrace where the mound rises somewhat sharply involved considerable difficulty. The only means of access to the third terrace seems to have been a steep flight of brick steps, built against the back wall of the southern antechamber (Pl. XLVI, *c*). A few steep risers (12″ to 13½″ in height) and narrow treads (4″ to 5″ wide) are all that is now left of this stairway, which must have landed the visitor close to the niche in the wall and above the narrow square verandah that circumscribed the main shrine. The niches on the south and west are similar to the one discovered on the north side, and are narrow passages with corbelled tops about 3′ in breadth

and 5′ in height at the mouth, but gradually getting narrower inside and partially blocked by a smaller opening after a short distance. It was barely possible for the workmen to stand and clear the openings of the soft mud that must have infiltrated from the top, as the opening was partially blocked after a few feet. Subsequently only a tin piece tied at the end of a bamboo pole could be passed through the opening to a length of 19′ on the south side and 22′ 6″ on the west side. The previous notion that the niches must have led to the interior of a hollow chamber has been justified but has to be corrected in the light of the facts emerging from the examination of the foundation walls of the chamber at the top. It now appears that the niches could not have served the purpose of admitting air and light or draining off water, the only possible use to which they could have been put being illumination of the temple on special festive occasions.

The summit of the mound when first seen[1] by Buchanan Hamilton over 100 years ago, had a small chamber of brick with a door facing the east and a small niche to the west, said to have been the residence of a Muhammadan hermit, who was occupying the place. As Cunningham[2] does not mention any such structure, it is probable that it was in ruins by that time. On clearing the débris at the top it was noticed that a brick floor could be distinctly made out over what proved to be the western foundation wall of the main shrine and a portion of it was overhanging the inner faces of the western walls. Whether the existing floor belongs to the ancient shrine or built by the *faqir* out of the bricks that he could gather on the spot is not clear, although the probabilities are in favour of the former supposition. In the excavation of the interior of the central chamber, it was noticed that a piece of brick masonry had fallen in as if from the adjoining floor. The interior filling of the shrine consisted entirely of hard débris of brick and concrete. Excavation of the interior was stopped only after reaching the depth of 25′ when dark coloured clay without any admixture of brick débris was found. An interesting point in the examination of the central chamber was the discovery of two small openings or niches, in the north and west walls respectively, at a depth of some 10′ from the highest existing point of the western wall. It was ascertained that the western opening proceeds at least for a distance of 17′-2″ inside the wall masonry and the northern at least 6′. It was at first thought that these interior openings must be somehow connected with the corbel-topped niches to be seen above the walls of the antechambers. But the perpendicular height between the two sets of openings is at least 10′ and their positions do not correspond. The occurrence of such openings in the walls of the second terrace verandah suggests no other purpose than that of drainage of water absorbed in the masonry by percolation. It is, therefore probable that the openings in the foundation walls of the main shrine at the summit, were intended for a similar purpose. The superstructure, the method of roofing and other details regarding the main shrine could not be ascertained.

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[1] Martin's *Eastern India*, Vol. II, p. 669.
[2] *A. S. R.*, Vol. XV, p. 119.

General Cunningham's[1] idea that the wedge-shaped bricks found by him at the top indicate the existence of a circular *Kalaśa* or pinnacle is not borne out by the extant details. The extraordinary thickness of the foundation walls and the small span (13′-6″ each way) to be covered rather point to a high and gradually tapering tower, of which only the pinnacle is unlikely to have escaped destruction.

The area on either side of the north gate buildings within the enclosure of mounds that formed the monasteries was examined to a length of over 100′ on the east and about 70′ on the west side. Excavation on the western side had not far advanced when work was closed for the season. The general plan of the structures excavated both on the west and east shows a row of double rooms facing a verandah on the south (Pl. XLVI, *a*). The verandah on the east side was terraced in two portions, which sloped towards an open court further south, in which a ring well 3′ in diameter was discovered, beyond which the outline of another complex of cells was laid bare. The front rooms facing the verandah on the east are spacious (15′-6″×13″) and must have been intended for the purpose of the residence of monks; the open space about 40′ in length between the gate building and the rooms being utilized for congregational purposes. A recessed passage in this portion leads to an isolated room on the north through a narrow opening with a corbelled top. This room 15′×12′ in size is just east of the outer hall of the north gate building and must have been an important place, probably the 'office' of the Vihāra, being in a sheltered and strong position, with thick walls on all sides. It shows two solid concrete floors, at different levels separated by 3′, the upper level associated with a doorway in the east wall and the lower one with two corbel-topped narrow passages through the north and south walls respectively. As some copper fragments and other antiquities were discovered just below the level of the later floor, it was decided to cut through the latter so as to expose the earlier floor of the entire room. The result was the recovery of the richest hoard of small antiquities so far found at Paharpur, including some 35 terracotta sealings, 30 stone beads, 5 copper coins, a large number of pieces of copper utensils, etc., which must be considered to be the débris of occupation of the earlier period. Big lumps of charcoal, which from the grain, appear to be remains of palm-wood, indicate the probable use of rafters of this material for the roofing of this room and the destruction of the structure by fire. Three copper coins of which the best preserved one is illustrated here represent a unique type showing a curious figure of a bull on the obverse and three fish on the reverse (Pl. XLVIII, *c 1*). Our knowledge of the copper currency of Bengal during the Gupta and Pāla periods is so meagre that any addition is welcome. The coins under discussion may be assigned to the early Pāla empire (Circa. 9th century A.D.) Another belongs to the well-known type known as *Vigrahapāla-dramma* (Pl. XLVIII, *c 2*)(*Ind. Mus. Cat.*, Vol. I,

[1] A. S. R., Vol. XV, p. 119.

p. 239). As there were no less than 3 Vigrahapālas in the Pāla dynasty, the correct assignment of this type has been a matter of difficulty with numismatists. From its association with other finds it seems certain that the present coin is to be attributed to the first Vigrahapāla, the father of Nārāyaṇapāla (Circa. 860 A.D.). The date of the third Vigrahapāla (Circa. 1050 A.D.) being rather too late is out of the question. The prince Vigrahapāla II (Circa. 975 A.D.) whose reign witnessed the lowest ebb of the first Pāla empire could hardly have issued coins. It is therefore very probable that the fourth Pāla king, Vigrahapāla I, the successor of Devapāla and the father of Nārāyaṇapāla was the prince who issued the 'Vigrahapāla coins.' The marked affinities of the *Vigrahapāla-drammas* with the *Ādivarāha-drammas* issued by the well-known Pratīhāra sovereign Bhoja I of the Imperial Pratīhāra dynasty (Circa. 840-890)[1] can best be explained by the circumstance that they were contemporaries. The debased coins of the Vigrahapāla type which Vincent Smith assigns to the second or third Vigrahapāla may have been issued after the original by other rulers, not necessarily even of the Pāla dynasty, as it is unlikely that only the three Vigrahapālas out of some 12 rulers of the Pāla dynasty issued coins.

Of the sealings, the most important ones are the class issued by the community of the venerable monks belonging to the great Vihāra at Somapura of (*i.e.* founded by) the illustrious King Dharmapāla (Pl. XLVIII, *d*). One such sealing was discovered during last year's excavation from a part of the main mound; this year a number of specimens, one in perfect preservation, have been found in the north gate area. It is therefore legitimate to assume, instead of referring to some Vihāra in another place, that the Paharpur establishment itself was known as the great Vihāra of King Dharmapāla from the 9th century onwards. The identity of the Nalanda, Sarnath and Kasia sites has been established by the discovery of similar sealings issued by the community of monks attached to the Vihāras at these places. A Bodhgayā[2] inscription recording in 10th century characters the gift of an image of Buddha by the Elder Vīryendra-bhadra hailing from the Samataṭa country (roughly South Bengal), the monk of the great Vihāra at Somapura, well-versed in the Vinaya canon, shows how the fame of this Vihāra was spread far and wide. The sealings of two individuals by name Dharmasena and Siṅhasena, numbering respectively 31 and 5 form the bulk of the collection found in the room (Pl. XLVIII, *c*, *i* and *j*). The impressions of narrow bands across the surface of what appears from the grain as palm-leaf documents on the reverse and the marks of through perforation indicate that the sealings were attached to documents. The multiplicity of seals would suggest that the two persons, Dharmasena and Siṅhasena were important local dignitaries and the 'office' of the Vihāra may have been in frequent communication with them.

The beads found in the room exhibit a variety of form and material (Pl. XLVIII, *b*). The collection includes 7 cornelians, mostly lozenge-cut (Pl. XLVIII, *a*), 3 banded agates, 13 round crystals, 7 dark-coloured basalts, 2 jaspers and 2 other stone beads.

[1] Both these classes of coins are referred to in a series of epigraphical records dating from the early part of the tenth century (*Ep. Ind. Vol. I, p. 167*).

[2] Bloch, *A. S. R.*, 1908-09, p. 158; and N. G. Majumdar, *Journal of the Vaṅgīya Sāhitya-Parishat*, Vol. XXII, (1917), No. 1, p. 69 and plate.

The nature and general plan of the buildings lying buried in the immense quadrangle of mounds surrounding the main temple is fairly clear from the structures already exposed. There can be little doubt that the remains of rows of chambers with verandahs and courts similar to those in the north gate area will be found throughout in the enclosure. There must have been at least 200 cells of the types discovered in the entire establishment occupying a quadrangle of about 900′ square and providing accommodation for about a thousand monks. No single monstery of such dimensions has yet come to light in India and the appellation *mahāvihāra,* "Great Monastery" as designating the place can be considered as entirely appropriate. As no remains assignable to an earlier period than the Pālas have so far been found in the quadrangle area, it may be taken that the foundation of the present monastic buildings was laid by the devout Pāla king Dharmapāla towards the end of the 8th century. In the earlier part of the 10th century, the disturbances caused by the Gurjara invasion under Mahendrapāla may have necessitated further repairs and reconstruction. The last building period in the monastery area must date roughly from the middle of the 10th to the end of the 11th century A.D. The floors of the cells of the last monastery have so far yielded practically no antiquities which suggests that the evacuation was not sudden.

A small mound that stood as a projection outside the enclosure connected with the southern rampart wall of the quadrangle was excavated during the year. It proved to be a sort of raised pathway or causeway 16′-6″ in width leading from the main building to a peculiar structure, standing east to west, which must have been a bathing platform (Pl. XLVI, *b*). At a short distance from its junction with the southern main wall, the remains of a vaulted passage 5′-6″ in width have been discovered under the pathway referred to above. The bricks of this vault were laid vertically with a slight inward curvature, so as to form a true vault, as in the artificial "cave" in Monastery I at Nalanda. The growing volume of evidence from excavations now renders it necessary to revise the old notions about the knowledge and use of the true or radiating arch and vault in pre-Muhammadan times. It would be more in accordance with the ascertained facts to say that the Hindu, Buddhist and Jaina builders showed a marked preference for the trabeated or corbelled form and that the radiating arch and true vault were not unknown to them although rarely employed.

The platform itself is a large open structure 105′-6″ long by 27′ broad and 8′ to 9′ above the original ground level. It has a series of 17 water-chutes each 1′-6″ wide, occurring at intervals of 4′ to 4′-3″ along the entire length on the south side. The channels are each 4′-3″ in length and the incline is about 2 in 1. Some of the older channels have been blocked up and new ones built on the top. There is a sloping pavement of flat bricks at the original ground level along the entire length of the platform to drain away the water coming through the channels. The further end of the platform was enveloped in deposits of sand, which occur all around the Paharpur settlement and are connected with the old river bed that once existed here. It is probable that

the entire population of monks came to the river bank for their ablutions, where fresh water was served to them on the platform and waste water eventually found its way back to the river.

Of the finds made during the year, the most important is the copper-plate dated 179 in the Gupta era, equivalent to 478-9 A.D. It is a record of the purchase and donation of certain lands in different villages in the District of Puṇḍravardhana, by a Brahman and his wife for the maintenance of worship at the Vihāra at Vaṭa-Gohālī, presided over by the Nigrantha (Jaina) ascetic Guhanandī and his successors. The identity of the village Vaṭa-Gohālī with the modern Goal-bhita, in which the Paharpur mound is patiarlly[1] situated is at once suggested. Although no other traces of Jainism are left and the predominant character of the monument in the 6th and the 7th centuries must have been Brahmanical, it may be assumed that the Vihāra of Guhanandī continued to attract Jaina ascetics probably till the end of the 7th century, when the growing confusion and anarchy in Bengal must have affected the prosperity of this settlement. It is reasonable to assume that Paharpur must have been one of the principal among the '100 Deva temples in the country of Puṇḍravardhana' noticed by the Chinese traveller, Hieun Tsang,[2] "where sectaries of different schools congregate, the naked Nigranthas being the most numerous."

Another interesting find made in course of the excavation of the tank close to the north gate area is a fine but fragmentary statuette of the Buddhist deity Hevajra (Pl. XLIX, *a*). The image is of bluish basalt, and on grounds of style must be attributed to the Late Pāla period or 11th century A. D. The god is here represented with his consort (*Śakti*) in the attitude of close embrace (Skt. *Yuga-naddha;* Tibetan *Yab-Yum*). He is shown as having eight heads, in a row, all with a third eye in the forehead, and sixteen hands, of which the seven right hands holding different animals on skull-cups are preserved. A garland of skulls is seen around the neck, but the legs are missing. The prevalence at the Paharpur temple in its later stages of existence, of the Vajrayāna faith, with its definitely hostile attitude towards Brahmanical deities can be surmised from this find.

By far the vast majority of finds in the excavations were the terracotta plaques, that came from the débris of verandahs of the first and second terraces. No less than 579 complete and fragmentary plaques were discovered during the clearance of the mound, which is not an excessive number considering that originally there must have been one bottom and one top band in the basement wall, one bottom and one or two top bands in the first terrace walls and possibly one band crowning the cornice at the top of the high wall of the second terrace. None of the last is *in situ*, but their existence is fairly certain from the finds of plaques near the high walls of the second terrace. The number

[1] In Buchanan Hamilton's account, the village is given as Gopal Chita Pahar. Cunningham has shown that this should be Goalbhitar Pahar; Cunningham takes Goalbhita to mean "cow-herds's mound." Gohāli can now be taken as the oldest name of the place, possibly derived from the plant of the same name.

[2] Beal, *Buddhist Records of the Western World*, p. 195.

of plaques *in situ* and recovered from the site now reaches a very high figure though a considerable number must have disappeared. Even as they are, if arranged in a single row, they would cover a distance of over two-thirds of a mile, taking 14″ as the average length of a plaque.

The vastness of the plastic material offered by Paharpur does not however constitute its main claim for the attention of scholars. Terracotta art in India is as old as neolithic civilisation and the Bengali craftsman shares with his brother of the upper Gangetic and Indus valley a long inherited skill in kneading the plastic loam and shaping the forms according to his fancy. The terracotta art of Paharpur has its counterparts in the Mirpurkhās Stūpa, the tiles of Hanumangarh in Rajputana, the decorated bricks and tiles of the Bhitargaon temple and the Saheth Maheth Stūpa, the Nalanda stūpas and the Lakshmaṇa temple at Sirpur in C. P. There is a striking similarity noticeable between the terracotta plaques of Śrāvastī and Paharpur. In Bengal itself, plaques of exactly similar types have been found at Sabhar in the Dacca District, the similarity being so close as to make it uncertain whether any particular specimen comes from one site or the other. The two sites are more or less contemporary in date and it would thus appear that the use of terracotta plaques as a material for the embellishment of the exterior of temples, had established itself in Bengal by the Late Gupta period, and may well be regarded as a distinctive feature of the monuments of Eastern India. From the nature of the material, the art seems to have been in the hands of more humble artisans, than was the sister art of sculpture, but whatever the loss in respect of skill and finish, the delineation of homely subjects, every day scenes of rural and out-of-door life of man and beast must have made the artist in terracotta keen of observation and fully responsive to his environment. As a folk art racy of the soil to which it belongs, the terracotta plaques of Bengal hold a very distinct and important position.

The essentially popular nature of the terracotta art of Paharpur is reflected in its delineation of stories current in folk-lore. European scholars have found[1] in old Indian story-lore 'the most original department of Indian literature, which has exercised a greater influence in foreign literature than any other branch of Indian writing.' It is interesting to find that several of the popular stories from the earliest and most widely translated work, the *Pañchatantra* can be recognised in the Paharpur plaques. Such, for example, is the well-known story (No. 1 of the 1st *Tantra*) of the meddlesome monkey, which came to grief in pulling out a wedge from a split beam of wood in a saw-mill. It is repeated twice on the Paharpur plaques, where we see a monkey perched on a beam in an inclined position as in the process of sawing, with the wedge in its hand, which is the key to the story (*Kīlotpāṭī vānaraḥ*) (Pl. XLVII, *b*). Another well-known story (No. 6 of the first *Tantra*) of which more than one illustration has been found at Paharpur is that of the lion *Madonmatta* (haughty) who being decoyed by a hare into a well and mistaking his own reflection for

[1] *Cf.* Macdonell, *India's Past*, p. 116.

another beast, tried to fight with him and perished in the attempt. The artists of Paharpur apparently found it necessary to omit all other details except the figure of the lion looking into the well.

A third plaque depicting a lion in a cave (Pl. XLVII, *a*) apparently refers to another story, that of the "talking cave," found only in certain versions of the *Pañchatantra*, such as the *Tantrākhyāyikā* of Kashmir, the Jaina versions, and the *Brihatkathā*, and is therefore considered as secondary in its entirety.[1] As remarked before, the utmost brevity demanded in the treatment by the nature of the material led to the elimination of even the essential elements of the story such as the jackal, standing in front of the cave, whose imaginary conversation with the cave led the lion to respond in roars. We thus see only the lion in the cave, apparently in the attitude of roaring, and no other details. This almost cryptic treatment and the absence of any sequence in the series render it difficult to assert with any degree of certainty whether any of the scenes depicted represent the stories known in popular folk-lore. Thus one of the best animal studies in the series, that of a deer grazing or drinking water may be a representation of the deer in the second *Tantra*, "the winning of friends." When pursued by hunters, it approaches the bank of a tank, where it eventually made friends with the crow, mouse and tortoise. The plaque representing a monkey holding a bunch of mangoes as in the act of offering illustrated in Pl. XLVII, *c* may refer to one of the numerous stories of offerings by monkeys in Buddhist literature. Scenes in which is shown the natural antipathy between animals, such as the mongoose and the cobra (Skt. *ahinakulam*) (Pl. XLVII, *e*) or the peacock and the cobra are frequently illustrated, but it cannot be ascertained whether these refer to any of the fables familiar to the student of Indian folk literature.

Another story in terracotta not found in the *Pañchatantra* shows what must have been a local version of a well-known Aesop's fable. The story of the lion released from the snares of a hunter by a grateful mouse meets us at Paharpur in the form of "elephant and mice." Here is seen an elephant in captivity, on whose body appear three mice, all engaged in the act of nibbling away the cords on the neck and legs (Pl. XLVII, *d*). The didactic nature of the fables relating to animals as found in early Indian folk-lore is eminently suitable for illustration in plastic form in a popular place of worship, where apparently people of all denominations congregated irrespective of their creed. The posterior limit of the age of the *Pañchatantra* which has been taken by scholars as the fifth century after Christ finds strong corroboration from what may be considered as the first representations of folk-lore stories unconnected with religion found on an Indian monument.

The plaques showing the animal and vegetable kingdom are as representative as possible of the typical fauna and flora of Bengal including the tiger and the leopard, the wild boar and the deer, elephant, and horses, jackals and dogs, cows and buffaloes, some of which are successfully and others somewhat

[1] Edgerton, *The Pañchatantra Reconstructed*, Vol. II, p. 77.

indifferently drawn. Among birds the duck and goose, peacock and parrot, are favourite subjects. Several representations of birds feeding their young can be noticed. The peacock is often shown with a semi-human face, distinguished by the plumage decorated by the eyes, treated appropriately to the Sanskrit name, as so many little moons (*chandrakas*). Different plaques representing birds in motion and at rest often make up a composition not unlike the series of motion pictures in a film. The plants include the palm and plantain, the *champaka* and *kadamba*, so typical of Bengal village scenery.

Among plaques depicting religious subjects, the figures of the Buddha in different attitudes such as enlightenment (*bhūmisparśa*), contemplation (*dhyāna*) and preaching (*vyākhyāna*) form a large and important class, mostly still *in situ*. The Bodhisattva Padmapāṇi occurs in several plaques and Mañjuśrī characterised by the book on a lotus to his left in one plaque. Among Brahmanical deities, Śiva, Brahmā, Vishṇu and Gaṇeśa occur several times. Among semi-divine beings, the most prominent class are Vidyādharas, the denizens of the firmament, shown singly or in pairs flying in the midst of clouds with the lotus-leaf pattern footgear shown on their legs. One of these beings mounted on what looks like a rhinoceros is illustrated in Pl. XLVII, *f*. The scaly body of the mount cannot be called as faithful a representation of the dermal folds of the Indian rhinoceros as is found in the terracottas of Mohenjodaro. Composite beings, with bird's wings and legs and human bodies, lion-faces and crossed human legs, cobra hoods and human trunks—all these go to make up the picture of a fabulous world which must have appealed strongly to the imagination of Bengal in the 6th-7th century A. D. By far the most numerous class among plaques represents human beings engaged in various activities of everyday life. Warriors holding sword and shield, musicians playing cymbals, gongs, trumpets or kettle-drums, acrobats performing difficult feats of balancing, ascetics seated in meditation or reducing themselves to skeletons are some of the more noteworthy human subjects.

The sense of humour of the artist of Paharpur finds as frequent expression in the delineation of semi-human and less developed races of men, as in portraying fables connected with lower animals. The Śabaras, the aborigines of the vast jungle tracts to the west and south-west of Bengal (now fast losing their pristine character, but still to be met with in their most primitive form in far-off localities, as *e.g.*, the Juangs of Keonjhar State in Orissa) with their quaint apparel mostly restricted to leaf aprons, and their picturesque hunting suit consisting of quivers and bows are represented by over a dozen plaques found this year. It can be easily understood how the type of Śabara female wearing a leaf (Parṇa) such as is depicted at Paharpur, gave rise to the conception of the goddess Parṇaśabarī in the Vajrayāna form of Mahāyānism (cf. *A. S. I.*, 1923-24, Pl. XXX, *b*). A bearded head in the form of a conch over a lotus is another attempt to depict the grotesque. Many other characteristic examples of successful delineation can be picked out of the wealth of material available, from the terracotta plaques of Paharpur but the foregoing are sufficient

to indicate the richness of this new phase of art and its value to the study of the early culture of Bengal.

NAPUKUR, SABHAR, DHANUKA AND SIBSAGAR.

By Mr. K. N. Dikshit.

It frequently happens in Bengal that ancient images of Buddhist divinities find a resting place under some tree, where they are worshipped under the name of some Hindu deity, with which the present population identify it in their ignorance. Dumnitala at NAPUKUR in the District of Murshidabad, is the site of an old temple on high land to the south of a *bil*, which must have once been the bed of a branch of the Ganges. The local people derive the name from Dumni or Domni, a woman of the Dom caste, the story being that the wife of a king, abandoned at this lonely spot along the river bank on suspicion of being a low caste woman was petrified and formed the object of worship. The main image worshipped here as Dumni is a sandstone figure representing an unusual form of the Buddhist goddess Vasudhārā (Pl. XLIX, *c*). The image is 1′-8″ in height and depicts the goddess as seated on a double lotus seat in easy attitude (*lalitāsana*). She holds the stalk of a lotus (?) in her left hand and a vase (*ratna-ghaṭa*) in her right hand, which is in the attitude of bestowing gifts (*varada*). The goddess has a lotus halo behind her head and the figure of the Dhyānibuddha, Akshobhya, her spiritual father, is seated on a lotus, exactly over her head. Usually, the distinguishing attribute of Vasudhārā is considered to be the ear of corn (*dhānyamañjari*) in her left hand, but in the present instance the object is not clear; another decisive mark is however found in the shape of seven vases (*ghaṭas*) below the lotus seat. The goddess Vasudhārā is supposed to deal plenty and prosperity to her worshippers and the *ghaṭas* may represent the vases of ambrosia. Vasudhārā is also considered to be the female counterpart of Jambhala, the Buddhist god of wealth, and as the row of vases under the seat often forms a feature of that god, they can also be looked upon as the distinctive mark of his consort Vasudhārā. Two stūpas are shown on each side of the back slab. A male and a female figure in a kneeling posture are shown on either side and may represent the donor and his wife. The image must be assigned to the 10th century A.D. on grounds of style.

At SABHAR in the District of Dacca, an oval-shaped terracotta plaque with the impression of a standing figure of Vishṇu with a few letters inscribed on it (Pl. XLIX, *b*), was discovered near the northern of the four mounds on the Rajasan site. The exterior edge of the plaque was dentated apparently to give it the shape of a discus or *chakra*, one of the chief distinctive marks of Vishṇu. The inscription appears to be the well-known formula (*mantra*) of Vaishṇavas, *viz.* *Oṁ namo bhagavate Vāsudevāya* ("Salutation to the Divine Vāsudeva"), written in characters of the 7th to 8th century A.D. The

peculiar feature of the figure of Vishṇu is that of the four usual attributes, he holds only the *Śaṅkha* (conch) and *Padma* (lotus) in the upper two hands, the lower ones being placed over the heads of two figures, a male and a female, which can be identified as the personifications of the remaining two attributes, *viz.*, the *Chakra* (wheel) and *Gadā* (mace). The same peculiarity was noticed on a bronze image of Vishṇu[1] from Kumarpur, now in the Varendra Research Society's Museum, Rajshahi. The find of the Vishṇu plaque indicates that the practice so common in all Buddhist sites of offering votive plaques or tablets impressed with representations of stūpas or the Buddha, accompanied by the Buddhist creed formula, was also in vogue among the followers of the Vaishṇava faith. The Rajasana site itself has before this yielded a number of burnt-clay tablets with a number of impressions of the seated Buddha attributable approximately to the same period. The present find would show that it would be erroneous to conclude that Buddhism occupied the sole field at Sabhar in its most prosperous period, roughly between the 6th and 8th centuries A.D.

While investigating the question of bringing certain temples of the 17th century at DHANUKA in the Faridpur District, within the provisions of the Ancient Monuments Preservation Act, the attention of the Superintendent was drawn to the existence of an interesting image of Mahishamardinī, worshipped in the house of a Brahman Pandit. The image is made of black basalt and depicts the goddess with the usual attributes in her 18 hands strictly in accordance with the texts or *Sādhanas*. The most important feature, however, is the presence on the back-slab of other gods, *viz.*, Brahmā and Vishṇu along with Śiva, Gaṇeśa and Kārttikeya[2]. The presence of the two sons and consort of the goddess Durgā can be explained on a strict sectarian basis, but that of Brahmā and Vishṇu as well connotes an attitude of tolerance or an attempt to reconcile the conflicting claims of different deities, which has, during several periods of religious developments, characterised the history of Hinduism.

A number of stone images and architectural fragments apparently collected from the ruins of a temple in the neighbourhood, are now preserved at the entrance of the Sub-Divisional Officer's Bungalow at SIBSAGAR in Assam. No information is now available about any pre-Ahom temple site in this part, but the existence of a fairly large Vishṇu temple dating approximately from 10th to 11th century A.D. can be surmised from these stones. Probably the early Ahom rulers destroyed these in some of their early invasions, although some of their latter-day descendants of the 17th century were the most energetic builders of Hindu temples of their day. The sculptures follow in the main the artistic traditions of the school represented by the Tezpur and Bamuni Hill temples of Central Assam, which are assigned to the 9th and 10th centuries. The affinities of Assamese art would seem to lie more with the schools of Bihar and Orissa, than with the contemporary Pāla art of Bengal. This is not

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[1] *A. S. I.*, 1923-24, Pl. XXX, (*d*).

[2] *Cf.* Chaṇḍī image from Bāṅgālbāri described in *A. S. R.*, 1922-23, p. 112.

unnatural, as of the streams of influence that have moulded the culture of Assam, the strongest current has always been from North Bihar and Mid-India.

The most important architectural fragment is a stone door-jamb with scroll-work ornament enclosing animal figures, similar to the stone work on the Ghaṇṭā-Karṇa temple at Kāmākhyā Hill, noticed in *Archæological Survey Report* for 1923-24, page 81. Of the images, the most important are the figures of Sarasvatī, a female figure in the attitude of obeisance (*namaskāra*) and the male holding bow and arrow, which may be the figure of Rāma. The former two must have occupied places near the entrance to a temple or on a door-jamb, as indicated by the thrice bent (*tri-bhaṅga*) pose of the body. Sarasvatī holds a lute across her chest and the other figure joins her hands together close to her breast as in the act of bowing (Pl. XLIX, *d*). Both examples successfully delineate devotional feeling. Other sculptures in the group include a figure of Gajalakshmī and the boar-incarnation of Vishṇu.

EXCAVATIONS AT NĀGĀRJUNIKONDA.

By Mr. A. H. Longhurst.

NĀGĀRJUNIKONDA, or Nāgārjuna's Hill is situated on the south bank of the Kṛishṇā river in the Palnād Taluk of the Guntur District and sixty-five miles north-west of Narasaravupet railway station. The nearest town is Māchерla 15 miles distant and a railway line to that town is now under construction and is expected to be open for traffic in 1930. The first ten miles of the road from Māchеrla can be travelled by bullock-cart over a bad road to a village called Nāgulavaram and the last five miles from this village to Nāgārjunikonda has to be done on foot as all cart traffic ceases at Nāgulavaram. The path over the rocky hills from Nāgulavaram to Nāgārjunikonda is a difficult and trying one. In consequence tents and all camp equipment have to be carried by coolies. Pullareddigudam is the only village near Nāgārjunikonda. Although occupying a very ancient site it contains nothing of archæological interest. Standing in the central part of a large red-soil valley some three miles in width it is completely surrounded by lofty table-topped hills about eight hundred feet in height. The Kṛishṇā flows on the north-western side of the valley forming the boundary between the Guntur District and the Nizam's Dominions. The central portion of the valley is under cultivation but the remaining lands including the slopes of the surrounding hills are covered with jungle. It is a wild and desolate spot and being shut in by hills is intensely hot during most of the year. The heat, lack of water (the river being 1½ miles away) and the number of snakes and scorpions which infest the valley, render it an unpleasant camping place.

The valley is dotted with a number of rocky hillocks and artificial mounds. The latter, covered with jungle growth, represent the remains of former Bud-

-dhist monuments. On the north-western side, overlooking the river, stands Nāgārjunikonda, a big flat-topped hill some two hundred acres in extent. Like the chain of surrounding hills, its summit consists of a rocky plateau the edges of which form lofty cliffs all round the summit converting the latter into a natural fortress. These natural defences have been strengthened by artificial brick and stone fortifications showing that the plateau was once used as a fort. With the exception of a small ruined mediæval Śiva temple, there are no signs of any ancient monuments but the vast amount of loose stone scattered all over the site indicates that rubble-built dwellings of a primitive type once stood on the plateau. The bricks used in the construction of the fortifications are similar in size to those used in the Buddhist monuments in the valley. The largest bricks resemble huge tiles and measure 20″×10″×3″, exactly the same dimensions as some of those recently unearthed at Bulandibāgh, the ancient site of Aśoka's capital at Pāṭaliputra. The brick fortifications were obviously built during the Buddhist occupation of the valley, if not earlier. On the lower slopes of the hill there are certain stone curtain walls and bastions which obviously belong to comparatively recent times and these were no doubt erected by petty local chiefs during the Vijayanagar period.

The Buddhist remains are found only in the valley. Some miles of country on the plateau were explored but no signs of buildings were found. This plateau is composed mainly of rock and is for the most part, utterly barren and waterless and quite unfit for human habitation. There is an isolated hill to the west of the village facing the river, which like Nāgārjunikonda, contains the remains of ancient brick fortifications all round the plateau on its summit but no trace of any buildings on this hill was discovered.

The Buddhist remains in the valley are represented by artificial mounds overgrown with vegetation. Some are on the level plain and others on rocky hillocks. Here and there, a lofty stone pillar still standing erect, or a protruding carved slab, indicates the site of some ancient ruined building, otherwise, nothing remains to mark the site of one of the largest and most important Buddhist settlements in Southern India. The area occupied by these remains is far greater than at the famous site of Amarāvatī in the same district. Its strategical position, protected on one side by natural fortifications and the river on the other, together with the two strongly fortified hills on the north and west shows that the town lying in the central portion of the valley must have been a place of considerable importance and well nigh impregnable in ancient times. In all probability, the Kṛishṇā was then a much bigger river affording easy navigation to the sea, thus making the town easily accessible and in communication with the other Buddhist settlements at Gōli, Chezarla, Amarāvatī, Jaggayyapeta, Ghantasala, Gummadiduru, Bezwada and Bhaṭṭiprolu, all situated within easy reach of the Kṛishṇā. Some of the huge blocks of limestone used in the formation of the larger pillars, beams and statues unearthed in the valley, point to the same conclusion, as they were not quarried locally, could not possibly have been transported over the hills and must therefore have been rafted down the river.

The existence of this remarkable site (Pl. L, *a*) was first brought to notice by the Assistant Archæological Superintendent for Epigraphy, one of whose assistants visited the place in 1925 and discovered three old Brāhmī inscriptions incised on some pillars standing near a ruined Buddhist Stūpa. He requested me to visit the place as its scientific exploration was sure to yield important results. As I was proceeding on leave at the time, Mr. M. Hamid Kuraishi, of the Central Circle, who was appointed to officiate for me while I was on furlough, and Mr. Gopal Pillai, my excavation assistant, carried out a preliminary survey of the site so as to ascertain its extent and possibilities. Although their operations only lasted a week or two, they discovered no less than eighteen ancient inscriptions, two ruined temples and several valuable sculptures, clearly showing that the site was rich in Buddhist antiquities.

During these trial excavations, Dr. Hirananda Sastri, the Government Epigraphist, visited Nāgārjunikonda, had the inscriptions copied and has since supplied a brief summary of their contents. He states that the three Brāhmī inscriptions resemble those published by Burgess in his volume on the "*Buddhist Stūpas of Amarāvatī and Jaggayyapeta*," and belong to the same little known dynasty which claimed descent from Ikhāku (*i.e.* Ikkhāku, Skt. Ikshvāku) the reputed progenitor of the solar race of Ayodhyā. These inscriptions, together with those found at Jaggayyapeta in 1882, show that this Ikhāku dynasty was ruling in the Andhra country in the neighbourhood of the lower Krishṇā during the second and third centuries of the Christian Era. The eighteen inscriptions discovered last year, like the Brāhmī inscriptions, also belong to the Ikhāku dynasty. Of these, fifteen are engraved on the bases of stone pillars or *stambhas* originally, set up in groups of five at each of the cardinal points of a large ruined *stūpa* referred to in the inscriptions as the *Mahāchaitya,* or Great stūpa. A long inscription was found on each of the stone pavements of two apsidal-ended temples, and another brief record is incised on a long, broken stone beam decorated with bas-relief sculpture which appears to have once formed the transom of a *toraṇa*, or gateway of a *stūpa.* One of the most noteworthy points about these old records is that most of them lay great stress on the consecration of the *Mahāchaitya* by the deposit of a relic (*dhātu*) of the Buddha. Similar corporeal remains, we know, were placed in the great brick *stūpa* at Bhaṭṭiprolu in the same district. The Bhaṭṭiprolu deposits, as shown by the inscriptions engraved on the relic caskets found in the *stūpa* date to about 200 B.C. It is possible and even probable, that the great Stūpa at Nāgārjunikonda was also erected about the same period and enlarged and added to in later times. The inscriptions clearly state that the stūpa was in existence when the groups of votive pillars were set up by the pious descendants of the Ikhāku dynasty in the second century A.D. Who built the original structure and in what period we do not know, as the inscriptions give no information on these points. The excavation of this very large monument has not yet been completed, but further explorations may, perhaps reveal some clue to the mystery. Unfortunately, this large *stūpa*, together with the smaller ones, has been demolished by treasure-seekers or other vandals

to such an extent that only their drums or basements remain. Thus any relics or other antiquities that may have been deposited above the level of the drums are irretrievably lost. The ruthless manner in which all of the buildings have been destroyed is appalling. Tradition relates that the great anti-Buddhist preacher Śaṅkarāchārya of mediæval times came to Nāgārjunikonda with a host of followers, expelled the Buddhists and destroyed their monuments. The fact remains, that almost all of the cultivated lands in the valley on which the ruins of these buildings are located, represent a religious grant made to Śaṅkarāchārya in ancient times and it was only with the permission of the present head of the followers of this great teacher that I was able to conduct the excavations. The first stage in the proceedings was to request the Government of Madras to declare the site "protected," under the Ancient Monuments Act and secondly to get the owner of the property to enter into a legal agreement. Through one cause and another, the latter has proved a lengthy business and at the time of writing the final agreement has not yet been executed. The owner, or rather his Agent, appears to imagine that the main object of the excavations at Nāgārjunikonda, is "a search for hidden treasure," a common mistake made all over India in similar circumstances, and often by educated people who ought to know better.

Dr. Hirananda Sastri informs me that the long inscription found on the pavement of the apsidal-ended temple situated on a hill known locally as Nāharallabōdu, records that a party of Buddhist monks came from Ceylon and took up their abode on this hill, and erected a stūpa and a monastery. The same inscription also mentions that on the western side lay the adjacent town of Vijayapurī. There are several smaller hillocks close to Nāharallabōdu, most of them containing the scanty remains of small stūpas on their summits. The chief remains of what must have been the most important buildings in the place, other than the Great Stūpa, are all situated on Nāharallabōdu. With the exception of Nāgārjunikonda and the other fortified hill to the south-west, Nāharallabōdu is the only hill in the valley containing sufficient space on its summit to accommodate a group of monastic buildings. It is an elongated hill running more or less from south to north, about a quarter of a mile in length and less than a hundred yards in width. The southern end of the hill is much higher and broader than the other and commands an extensive view of the surrounding country. From this point, the hill slopes northwards terminating in a small hillock. The excavations carried out on this hill show that the chief buildings were situated on the high ground to the south. These originally consisted of two stūpas, the apsidal-ended brick temple containing the long inscription recording the pious works of the Ceylonese monks and a large brick and plaster monastery with attendant buildings for domestic purposes (Pl. L, *b*). At the northern terminus of the hill, a stūpa, another apsidal-ended brick temple containing a huge limestone statue of the Buddha over eight feet in height, and a small monastery built of brick and plaster were discovered. The excavations at this end of the hill have not yet been completed,

A trench was cut through the stūpa but nothing of interest was recovered. The drum of this stūpa, as often in Southern India, is built in the form of a big wheel with hub, spokes and tyre executed in brickwork, the open spaces between the radiating walls forming the spokes being filled with earth.

Thus on Nāharallabōdu, there are the remains of two groups of monastic buildings each containing similar types of ruined monuments. There seems little doubt that the ruined stūpa and monastery standing close to the temple containing the long inscription on its pavement, represent the *Chaitya* and *Vihāra* erected by the Buddhists from Ceylon. In all probability, they also built the brick temple containing the inscription recording their pious works as the style of the latter shows that it belongs to the same period. The discovery of these buildings on the hill, and the testimony of the inscription, seem to indicate that Nāharallabōdu and the Siripavata of the inscription are one and the same hill. Dr. Hirananda's brief summary of the inscription does not afford all the information expected but he definitely states that the inscription records that the Ceylonese monks and nuns erected a *chaitya* (stūpa) and a *vihāra* (monastery) on a hill named Siripavata, and that they apparently also erected a group of similar monastic buildings on a hillock named Chuladhamagiri. This is somewhat confusing as there are several hillocks close to Nāharallabōdu and most of them show signs of having possessed a small stūpa on their summits. Nāharallabōdu is however the only hill containing any remains of monasteries and temples. It is, indeed, the only hillock in the valley with sufficient space on its summit to accommodate a group of monastic buildings. Possibly the Buddhists regarded the terminal hillock at the northern end of Nāharallabōdu as a separate site and named it Chuladhamagiri to distinguish this smaller group of monastic buildings from the larger one on the main hill. Perhaps the larger monastery may have been for monks and the smaller one at the other end for nuns. A good example of this arrangement occurs in the rock-cut Buddhist monasteries at Guntapalle in the adjoining Kistna District, described and illustrated in the Annual Report of the Archæological Survey, Southern Circle for 1916-17.

Nāharallabōdu is not only the biggest hillock in the valley but is superior to any other as a building site as it is centrally situated in the most fertile portion, and is close to the Great Stūpa and commands a delightful view of the surrounding country, features of importance with the Buddhists, and is only 1½ miles from the river. The inscription also tells us that Siripavata was conveniently situated with regard to the adjacent town of Vijayapurī. The latter must have been the ancient name of the town that originally occupied the central portion of the valley extending in a westerly direction towards the river. This site has not yet been excavated but contains the remains of several ruined mandapas or pavilions with some of their pillars still standing. It appears likely that the town area was extensive.

Dr. Hirananda Sastri points out in his epigraphical summary that the name Siripavata, is obviously the same as the Sanskrit 'Śrīparvata'. This is

interesting because Nāgārjuna, the reputed founder of the Mahāyāna or Northern school of Buddhism is said to have ended his days in a monastery situated on Śrīparvata in the south. The identity agrees admirably, especially as the locality had become sacred to Buddhism on account of the Buddha relic enshrined in the Great Stūpa. That monks and nuns came all the way from Ceylon to visit the place shows how famous it must have been, perhaps, not only on account of the sanctity of its stūpa but because of its associations with Nāgārjuna. The name Nāgārjunikonda, meaning Nāgārjuna's hill lends strong support to this identification. Should it prove correct, then the identification of Śrīśailam, an ancient site containing a famous Śiva temple situated on the banks of the Krishṇā in the adjoining Kurnool District,[1] which was proposed by Burgess, and other scholars will have to be rejected.

The inscriptions show that the Great Stūpa was restored and added to in the reign of Sirivirapurisadata of the Ikhāku dynasty and that the two apsidal-ended temples containing long inscriptions belong to the same period. This ruler apparently, was the son of King Vāsiṭhīputa Sirichātamula of the Jaggayyapeta inscriptions, and was in his turn, succeeded by his son named Vāsiṭhīputa Siribahuvalachātamula. An inscription belonging to the reign of the latter records the donation of a pillar and a monastery by a royal lady of the Ikhāku dynasty whose name is not preserved but who is called the consort of the king of Vanavāsa (North Kanara). These records also acquaint us with the names of several members of the same royal house, some Buddhist monks and other persons. They show too that most of the donations were made by princesses of the Ikhāku dynasty, one named Chāntisiri having been particularly liberal. She is described as the sister of King Sirichātamūla and aunt of King Sirivirapurisadata. It is interesting to note that whereas in each case this royal donatrix appears as an ardent devotee of Buddhism, her brother Sirichātamūla, is referred to in the inscriptions as a follower of Brahmanism and as a performer of Vedic sacrifices. This speaks well for the religious toleration of those early days and is in marked contrast to the reforming zeal of Śaṅkarāchārya and his followers who visiting Nāgārjunikōnda in later times expelled the Buddhists and destroyed their religious monuments.

With the exception of the details regarding the pedigree of the donatrix, the contents of these records are practically identical. They mostly begin by praising the Buddha and mention the consecration of the Great Stūpa by the deposit of his *dhātu* or corporeal remains. Then come the details regarding the family connections of the donatrix and the object of the pious gift, the latter as usual, being for the welfare of the donor, of his or her relations and of the universe generally. This is followed by the date. Not less than ten of these inscriptions record gifts by Chāntisiri who is spoken of as a liberal lady whose charity extended to all classes. The remaining inscriptions record similar dedications by other ladies. One of them named Radalika, seemingly from Ujjain, together with Chāntisiri, provided most of the money for the res-

[1] Vide *Annual Report of Archæological Survey, Southern Circle* for 1917-18.

toration of the Great Stūpa. Dr. Hirananda Sastri states that not a single inscription has yet been found at Nāgārjunikonda recording a donation or dedication by any male member of this royal house, though it is significant that all of the three rulers whose names have been revealed to us allowed their names to be associated with those of their female relations. Was it out of regard for these ladies or the result of their religious toleration ?

One of the long inscriptions on the pavements of the two apsidal-ended temples, comprises two lines and is dated in the reign of Sirivīrapurisadata and records that the lady Chāntisiri erected a stone pillared *maṇḍapa* or pavilion containing four halls close to the Great Stūpa in order to secure long life for the king, welfare for herself and family as well as for the comfort of pious pilgrims from distant countries. The other epigraph has four lines. The portion giving the date is damaged, otherwise, the particulars are well preserved. This also belongs to the time of Sirivirapurisadata and records the construction of a stūpa and monastic buildings by the Ceylonese monks mentioned above. The name of the builder or architect is mentioned as *Salavadhaki* (stone-mason) Vidhika, who apparently worked under the direct supervision of three Buddhists named Chandamukha, Dhammabhandi, and Nāga. The donatrix of these buildings seems to have been Bodhisiri, the *Upāsikā* or lay votary of Buddha. The record gives a long list of the lady's relations who are mentioned as having a share in the merit of her pious works. An interesting point about this record is, it not only mentions contiguous tracts like Vengi, and North Kanara, but Kashmir, Gandhāra, Ceylon, and even China.

These interesting old records show that the ancient name of the place was Vijayapurī and that it contained a hill named Śrīparvata on which was situated a group of monastic buildings erected by the Buddhists. The name Śrīparvata often occurs in ancient epigraphical records, whereas, Vijayapurī does not. The hill would naturally be of more importance to the Buddhists than the adjacent town, especially in later times, on account of its associations with Nāgārjuna, and perhaps, when writing or speaking of the locality they used the name of the hill rather than that of the town so that in course of time the name of the latter fell into disuse. It is quite clear from the inscriptions that the Great Stūpa was the chief object of veneration and attraction of the locality attracting pilgrims from far distant countries, and that it was in existence before the reign of King Sirivīrapurisadata when the Ceylonese monks visited the place and built a monastery and other buildings on Śrīparvata.

It was the custom with the Buddhists at all of their great religious centres, such as Sāñchī, Sārnāth, Amarāvatī, to erect their monastic and other monuments in close proximity to the *Mahāchaitya*, just as in mediæval Europe, the Christian monks built their monasteries and chapels in the vicinity of the great cathedrals. So we may feel sure that Śrīparvata was situated close to the Great Stūpa.

Dr. Hirananda Sastri suggests that the name Śrīparvata may have meant the chain of hills surrounding the valley. As already noted the barren and waterless plateau on these hills is quite unsuitable as a site for a Buddhist

settlement and as it contains no traces of ancient Buddhist monuments there is no reason to assume that any formerly existed.

The vandals who destroyed the Buddhist buildings accomplished their work of destruction only too well but they at any rate left the foundations standing to mark the sites of the monuments they demolished and these remains still exist.

Had Nāgārjuna's Hill contained the remains of any former Buddhist monuments, such as, ruined stūpas, temples or monasteries, there could be no hesitation in identifying this hill with Śrīparvata, especially as Nāgārjuna is said to have died in a monastery situated on Śrīparvata and this hill bears his name. The ancient brick fortifications show that the hill was used in Buddhist times as a citadel, or as a place of refuge in time of war, but there is nothing to indicate that the Buddhists ever erected any religious monuments on this hill. The loose stone or rubble strewn about the plateau may belong to any period. This material is just the same as that now used in the construction of the primitive dwellings of the neighbouring villages and was certainly never used in the construction of any religious monuments erected by the Buddhists. Owing to the height of the hill and the lofty cliffs round its summit, it is very difficult of approach from the valley and it would have been an exceedingly difficult task for the Buddhist builders to have transported large blocks of limestone up the hill. There is plenty of good building stone in the locality, but the Buddhists never used it. All their stone work was executed in a pale grey limestone, some almost as white as marble. When first quarried this stone is very soft and easy to work, becomes hard after exposure, but is always brittle and therefore, difficult to transport. It is not surprising that the Buddhists never attempted to use this material on the top of Nāgārjunikonda, but there is no reason why they should not have erected stūpas and monasteries of brick and plaster had they so desired. However, they do not appear to have erected any religious monuments on Nāgārjunikonda, otherwise some trace would certainly have remained. So this identification seems improbable.

Thus we have to return to Nāharallabōdu as the most likely hill in the locality to identify with Śrīparvata. I venture to think that the reasons I have given above for this selection lend strong support to this identification, especially as Nāharallabōdu is the only hill in the locality containing any remains of monastic buildings, and we know, that Śrīparvata was famed for its monastery.

The remains that have so far been excavated comprise three Buddhist temples, two monasteries and three stūpas. A trench six feet in width was cut through the Great Stūpa but no relics or other antiquities were found within the mound, but the work has not yet been completed and it is possible that the Buddha relics it once contained may be recovered. Some very fine sculptures that originally adorned the basement of one of the smaller stūpas were discovered, well repaying the cost of their excavation. The work of excavating the two large apsidal-ended temples and the big monastery has been completed and the ruined walls repaired to prevent further decay. The smaller monastery and temple situated at the northern end of the hill known as Nāhar-

allabōdu have not yet been completely excavated. There are also a number of mounds presumably the remains of stūpas and the sites of several pillared halls awaiting attention. Fifty large sculptural antiquities have been recovered and it is likely that more will be found as the excavations proceed.

In the adjacent forest to the north-east of the valley and about a mile from the Great Stūpa, I discovered a ruined brick stūpa overgrown with rank vegetation and when the jungle was removed and a trench dug all round the base of the mound, it was found that the stūpa was originally faced with beautifully carved limestone slabs similar in style and design to those belonging to the famous Amarāvati stūpa now in the British and Madras Museums. These magnificent sculptures consist of a series of large vertical panels profusely decorated with representations of stūpas and scenes from the life of the Buddha (Pl. LII, *a* and *b*). Above the vertical slabs adorning the base or drum of the stūpa, was originally a series of horizontal bas-relief panels forming a frieze or encircling band all round the stūpa half-way up the dome. These slabs are decorated with the beautiful "garland ornament" so familiar in the Amarāvatī reliefs. Above this frieze, the ornamentation of the dome appears to have been executed in plaster as no carved stones were found that could possibly have served as a facing for this portion of the stūpa. The scenes portrayed in these reliefs are of exceptional beauty and iconographical interest, as they illustrate a number of the Jātaka stories, including several incidents not met with before, and in this respect are more varied and interesting than many of the Amarāvatī reliefs. In addition to this splendid collection of carved slabs and panels, I discovered four large stone beams exquisitely decorated with bas-relief sculpture (Pls. LI and LI*a*). The beams measure eleven feet in length and about one foot in thickness. There seems little doubt that they formed the transoms or single bars of a *toraṇa* or gateway, situated at each of the cardinal points of the stūpa. The front surface of each beam is divided up into a series of small panels filled with finely executed bas-reliefs resembling ivory carving in their minute detail and delicacy of workmanship. These stone transoms are a unique and valuable discovery unlike any other Buddhist antiquities so far discovered in India, and are remarkable not only for the excellence of their carvings but also on account of their iconographical value as they portray many strange scenes not met with before in Buddhist art.

Another find of interest was some iron implements, presumably mason's tools, and forty-four lead coins of the Andhra period of about the second century A.D. found in the debris of a brick and plaster monastery.

Owing to the valley being enclosed by lofty hills and the absence of any cart track leading out of the valley, the transportation of these large sculptures to Nāgulavaram, the nearest village possessing a cart road, will prove an exceedingly difficult matter, unless a road is made over the hills to this village from Nāgārjunikonda. The ruined buildings will be preserved on the spot, but the proper place for the priceless collection of sculptures is a museum.

EXCAVATIONS AT PAGAN.

By Mons. Charles Duroiselle.

During the year under report excavations were continued at PAGAN and HMAWZA. The season opened with operations at Pagan where a number of mounds near the Ānandā, Sulamani and Nagayôn temples, and the Shwesandaw and Somingyi pagodas were selected.

Of the two mounds near the Ānandā, one was a few hundred feet to the east and the other about the same distance to the south of the temple. The one on the east measured about 75 feet in length from east to west and 50 feet from north to south, with a central height of 7 feet above the surrounding country. A shaft 8 feet square was sunk from the top and traces of a brick image were discovered a few feet below the surface. On widening the shaft as the work proceeded, the lower portion of a Buddha in a sitting posture resting on a brick pedestal, was exposed. It was encompassed by four walls, each with an opening. The Buddha faced west, *i.e.*, towards the Ānandā temple. Further digging on that side brought to light another enclosed area connected with the first by an opening 4′ 4″ in width and 3′ 10″ in breadth.

The pedestal of the figure in the first chamber measured 8′×6′ 9″ with a height of 2′ 7″ and was placed near the centre of the room. The surrounding area was paved with bricks but that part of the floor immediately touching its base was laid with stone flags half buried underneath it. The Buddha on the pedestal, of which only the lower limbs were extant, measured 5′ 9″ from knee to knee.

The chamber containing the pedestal was the *cella* or sanctuary proper, the other enclosed area adjoining it on the west being the porch of the temple. From many complete examples which may still be seen in Pagan, its general plan could easily be restored. It was a temple with a square basement crowned by a stūpa of the conical type rising above a series of terraces; a porch projected from the basement on its west face. Such porches are ordinarily found on the east, as most figures face this side, but in this case the temple had been made to face the great Ānandā temple to the west of it; there are in Pagan other instances of monuments the orientation of which deviates from that generally adopted, that is the east; for example, some are met facing north, while some others face south. In such cases, the image within was turned towards a much larger monument near by, which was considered the principal shrine, the smaller ones within a certain radius around it, though quite separate from and independent of it, being merely subsidiary temples.

A search was made for relics by opening up the pavement round the pedestal and dismantling a portion of the latter. Right underneath the pedestal was a small brick chamber covered with a slab of stone and a miniature stūpa-like structure, in brick with receding steps. The chamber was two feet square with a depth of three feet. This relic chamber had doubtless been broken into and rifled of its contents, for nothing was found in it. However,

on the floor above it, in the space between the wall of the *cella* and the back of the pedestal, were found many fragments of terracotta votive tablets bearing an image of Buddha seated on a lotus. These may have formed part of the contents of the relic-chamber and been thrown up as useless by the treasure-hunters. A feature of these tablets are legends in Talaing with a word or two in Pāli, below the lotus on which the Buddha is seated. The short legends record the names of donors, laymen as well as monks. The writing is of a type belonging to the twelfth century A.D., to which date the building itself may probably be ascribed.

The mound to the south of the Ānandā was 49 feet in diameter at the base and eight feet in height. A shaft twelve feet square was sunk in the centre. A few inches below the surface were found two fragments of a stone plaque with figures, unhappily much weathered, a terracotta votive tablet impressed with many effigies of the Buddha, and a fragment of another tablet containing a Buddha image with a Nāgarī legend below it. At a depth of one foot below the surface, was found a brick wall running north to south, close to the east side of the shaft, and measuring 7′ 9″ in thickness and 9′ 2″ in length; at both its ends and at right angles to it, there were two other walls running east to west. Within the space contained by these three walls, abutting against the eastern one and running all along its length, there was a pedestal measuring 4′ in width; there were no remnants of any image on it, and no *débris* was found. The figure had probably been removed to a more secure place when the building began to decay.

On widening the shaft towards the east and the north, there were discovered traces of two other walls running at right angles to each other and encompassing those mentioned above, forming with them a passage or corridor 5 feet in width on the north and 10 feet on the east. On the outer face of the inner wall were niches which had contained images. Having thus far ascertained the plan of this completely ruined monument, which had most probably been a Buddhist temple consisting of a central *cella* surrounded by vaulted corridors, a search was made for such relics as the ruins might contain. In this type of buildings, relics were generally placed in the pedestal or, more often, in a brick chamber over which it was built. The pedestal was ornamented, like most brick pedestals in Pagan, with simple mouldings, and presented no particular interest. It was removed, and a shaft six feet square sunk on the spot. The virgin soil was reached at a depth of 6 feet below the ground level, but nothing was found, either in the shaft or in the pedestal itself. Treasure-hunters had apparently investigated these ruins long ago.

Almost all the other mounds dug into at Pagan during the year under report showed, in the course of excavating, traces of having been rifled at some remote period. Pl. LIII, *a* and *d*, show the remains of pedestals unearthed, the first near the Sulamani, the second near the Nagayôn temples; in both can be clearly seen the nefarious work of old time vandals.

The finds from the two mounds just examined were disappointing but we were, however, somewhat more fortunate with our excavation near the

Somingyi pagoda, where the mound was seven feet in height and forty-five feet in diameter at the base. On opening it a rectangular area measuring 33′ 5″ from east to west and 29′ from north to south, walled in on all sides and with but one opening in the east face, was disclosed. The western half was occupied by three rectangular compartments side by side and separated by partition walls; each room was provided with an opening on the eastern face; the opening of the middle one being three feet in width, and those of the other two 2′ 6″ each. What remained of a Buddha image seated on a pedestal was found in the central room, while the two side ones contained a few minor antiquities.

The pedestal, of brick and plaster, was in a fair state of preservation; there were still some traces of paint in several places which had preserved much of its brightness. It was built against the whole width of the wall on the west, filling up nearly half the room. A hole was made into the pedestal from the back breaking down for this purpose a portion of the wall against which it rested. The pedestal itself was three feet in height. At a depth of four feet from the top, there was found a miniature stone stūpa in a small brick chamber; this chamber was 2′ 6″ in height and had been built close to the back of the pedestal. The stūpa itself is 1′ 2″ in height and 8″ in diameter at the base. It consists of a dome resting on two circular terraces and surmounted by the diminishing rings that now represent the stone discs of the umbrella in old Indian stūpas and crowned with an *āmalaka.* The dome together with the mouldings above is detachable from the terraces. Within the cavity in the latter were found some ashes, probably those of a monk, and small caskets of extremely thin plates of gold and silver. On the four sides of the stūpa were found eight stone bricks, two on each side, one being laid over the other with, between them, two very thin plates, one of gold and one of silver. These stone bricks with gold and silver plates between, were doubtless meant to represent the solid gold and silver bricks with which, according to Burmese tradition, the flooring of relic chambers and the foundations of stūpas were, in remote times, laid.

The two rooms on the sides were empty, as was to be expected, having been the cells ot fwo resident monks; for the building had been a *vihāra* and a chapel combined. In one cell were found fragments of a monk's earthenware begging-bowl, and a large number of cowries were picked up in the other. These were doubtless used for money, and thus, from the numismatic point of view are interesting, for most writers on the subject seem to consider that the cowrie shell has never been used among the Burmans for small currency. It is, however, well known that such a currency was in common use among the neighbours of the Burmese people[1]; from there it probably spread to Pagan, though its use may have been unpopular among the people of later days. This is, as far as is known, the first time that cowries have been found in Pagan, and the find is interesting, the more so as the building belongs

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[1] *Indian Antiquary,* Vol. XXVI, p. 290.

to the thirteenth century A.D. It may be remarked that no minted or punched money has ever been found in Pagan.

The other objects found in the excavation were :—a small stucco head of a Buddha image; a tray of baked clay; fragments of stone slabs with faint and half effaced traces of sculptures; terracotta votive tablets; fragments of a brick Buddha; a headless plaster image of Buddha, and two stūpa-like objects in bronze (Pl. LIII, *c*). In each of the last, the dome is somewhat in the shape of a water-pot, resting on a moulded pillar the base of which is missing.

The mound next excavated did not yield any of the votive tablets generally so numerous at old sites in Burma, nor other religious objects. It was situated about three hundred feet to the south-east of the Shwesandaw pagoda; its diameter at the base was fifty feet and its height nine feet. The place must have been a burial ground, as the only things found there were rusty iron implements and nails, and funeral urns containing fragments of charred bones.

At a mound near the river bank, close to the south of the Taw-ya-kyaung monastery on the west of the Nanpaya temple, was found a small bronze tablet nearly 4¼″ in height, containing a Buddhist triad (Pl. LIV, *a*). Each of the three figures is seated on a lotus throne and is surmounted by a stūpa. The central figure is slightly larger than the two flanking him. He is seated cross-legged with the right leg over the left. Both hands are brought against his chest, the right being held up sideways and resting on the palm of the left. He has long-lobed ears and the *ushṇīsha*; the hair is represented by rows of round beads; both shoulders are covered. On the right he is flanked by a figure in every way similar, excepting that the right hand is in the *bhūmi-sparśa-mudrā* and the left, resting on the lap, holds a round object, probably an alms-bowl. The figure on the left, in princely raiment and ornaments, is seated in the *lalita-mudrā*, with the right hand hanging down over the right knee and the left resting on the left knee.

These figures may be compared with those on a terracotta votive tablet discovered at the same mound. The figures on this are, except for a few minor details, practically identical with those on the other, slight differences consisting in the central figure having the right hand in the *abhaya-mudrā*, while the figure on its right holds no begging-bowl, but wears a necklace which is clearly visible on some of the tablets. Below the throne of the central figure there is a short legend in Pyū, beginning with the word "Budha". It may be read as follows :—

Budha mga : psu : khṅu.

Although this legend is quite short it is difficult to translate it with any confidence on account of the poverty of the Pyū vocabulary, for so far not more than 150 Pyū words have been identified with any certainty. The triad on these two tablets, however, no doubt represents: in the middle, Gotama Buddha, on his right, Maitreya and on his left Avalokita. Maitreya in monastic garb with little or no distinction from Gotama, is fairly common in Burma; while Avalokita as an attendant of the Buddha in company with Maitreya

or alone is not unknown. These tablets, at least the terracotta one, were probably imported from Old Prome.

It may prove of interest to add to this brief account of excavations at Pagan short notes on some antiquarian objects discovered at Natpallin, a village twelve miles from Nyaung-oo, on the Nyaung-oo Kyaukpadaung road, Pagan. They were discovered by the local monks and elders in a ruined temple among objects rejected by treasure-hunters.

The temple itself was of unpretentious dimensions, with a walled chamber measuring 6′ × 3′ × 4′ and a porch on the east face (Pl. LIV, *c*). It had been built in an area surrounded by walls measuring forty-two feet from north to south and thirty-one feet from east to west. Placed against the back wall of the chamber had been a Buddha image in brick and plaster, the traces of which were still clearly visible; the treasure-hunters broke down the image and its pedestal, and opened up the two relic chambers underneath, which were situated one above the other and separated by a large stone slab. Both were lined with stone slabs on every side. The upper chamber was three feet square and two feet in depth and covered over with a slab of stone 4½″ in thickness, while the lower one was 4′ 7″ × 4′ 3″ with a depth of 2′ 9″. The walls of the upper chamber rested on the large slab separating the two. Both these chambers seem to have been packed full with images of Buddha in stone, bronze and probably gold and silver, and with many other miscellaneous objects. Such as were of any real monetary value, the treasure-hunters had removed, leaving behind only those found by the monks and which are now preserved in a local monastery. Among these are 188 images of the Buddha and of Jambupāti of different sizes, the biggest being 15½″ and the smallest 5″. I made a representative selection of these images and other objects to be deposited in the Museum at Pagan, including the following:—

(1) A bronze image of the so-called Bodhisattva Jambupati (Burmese: Zabupadé) seated cross-legged on a throne; his right hand is in the *bhūmisparśa-mudrā* and the left rests on the lap. He wears wristlets, armlets, huge ear-ornaments and a crown; his breast ornament is quite distinctive; the robe is indicated by lines (Pl. LIII, *e*).

(2) Bronze figure of Jambupati seated in the same attitude, wearing only a necklace and ear-ornaments and a crown; the *mukuṭa* is surmounted by a conical object in the shape of an *āmalaka*, such as generally crowns a Burmese stūpa.

(3) Bronze image of the Buddha seated cross-legged in the earth-touching attitude. Flanking it, there must have been two smaller figures, which are now missing (Pl. LIII, *b*). Below the Buddha is a quaint figure seated on its heels. The hands are raised holding the two tresses into which the hair is parted and which fall on both sides. This represents Vasundharā, the Earth-goddess, whose image is found all over Indo-China. The throne bears a line of writing in Burmese stating that the image was the meritorious

work or gift of one Bonthi and his wife Chit Yin, and that it was completed on Wednesday the 10th waxing of Tazaungmôn in the year 1005 Sakrac (=25th October, 1643). This incidentally gives us the date of the foundation of the temple and of the objects enshrined in it. Burmese statues are very seldom so dated.

(4) Model in bronze of a Burmese stūpa (Pl. LIII, *f*).

(5) Bronze Buddha in the *bhūmisparśa-mudrā* seated on the coils of the serpent Muchalinda, whose hood is expanded protecting the Buddha's head (Pl. LIV, *f*).

(6) An earthenware relic-casket with a cover in the shape of a stūpa. It contained many small round beads of some hard substance, whitish in colour and which, though certainly not bones, are considered all over Burma as the corporeal relics of saintly monks; they are very frequently brought to light (Pl. LIV, *d*).

EXCAVATIONS AT HMAWZA.

By Mons. Charles Duroiselle.

At Hmawza, this year, I opened up twenty-three mounds within an area covering three square miles; some were situated within the old city walls, others without. *All were on the south side of the* Rangoon-Prome *Railway* line, which very nearly divides the ancient city into halves, and runs in a north-westerly direction. The most important of these mounds, from the point of view of antiquities recovered, was the one known as Kan-wet-Khaung-kôn. But even including the finds made at this particular spot, it must be stated, at the outset, that the excavations this year at Hmawza, yielded but very poor results, apart from the historical importance of one or two pieces. At the above named mound, a certain number of sculptures were found among which is a broken figure of the Buddha having an inscription in archaic characters in two languages on the pedestal.

The mound was about forty feet in diameter at the base, with an average height of about four feet. A chance find among the *dêbris* on its surface, of a broken stone slab, with the figure of a seated Buddha carved on it in *alto relievo* first drew attention to it. The first day's work brought to light another similar slab, also broken, and two other fragments with finely sculptured floral designs. The second day yielded more finds of the same character; there were found, at the north-west corner and close to the foot of the mound, twelve other stone slabs, all bearing an identical Buddha seated with the right hand in the *bhūmisparśa-mudrā,* and the left in the lap with an alms-bowl resting on the open palm. The legs as in many other figures found at this ancient site, are crossed, the right being placed over the left. The Buddha is seated on a cushion placed on a lotus throne. Its special features

are, a round face, flat nose, thick lips, and an almost straight body, with the waist barely indicated. These details indicate local workmanship in contradistinction to Indian craft, examples of which were found in Old Prome. The features are probably Pyu and resemble very closely those of the Burmese, both nations being of Mongolian stock. These images are interesting in that they have preserved, though somewhat perhaps stylized, the features of a people who have disappeared from among the nations of Indo-China several centuries ago. The dress is not indicated at all by any line or fold, so that the figure seems divested of clothing; the *ushṇīsha* and hair on the head, which is surrounded by a plain halo, are quite smooth.

More figures of the same description were unearthed on the following days; most of them were found undisturbed in their original position. The building as it once stood appears to have been solid, and octagonal in plan, each side measuring 22′ 3″. There were obviously four such images in a row on each side, the total number being thirty-two; but only twenty-three were recovered. Each measures 1′ 2″ in height and 7½″ in breadth. They are of soft whitish stone, somewhat resembling lime mortar in composition.

None of these figures bears any writing; but this deficiency is made up by a fairly long inscription, found round the pedestal of another, and much larger, image of the Buddha discovered at the same site. The head is missing; a portion of the inscription on the back of the pedestal has worn away, but enough remains to enable me to judge of its importance as an historical document. The figure is seated in the *Dhyāna-mudrā*; Gupta influence is discernible in the dress which is indicated only by lines at the edges, and across the breast, leaving bare the right shoulder (Pl. LIV, *h*). The inscription in well-cut letters on the four sides of the oblong pedestal, is in two different languages: Sanskrit (sometimes not quite correct) and Pyū; the Sanskrit phrases are very short, consisting of two words mostly, sometimes three and even one word; each is followed by a long explanation in Pyū; the Sanskrit appears to be arranged according to Pyū syntax, the sentences not following the order they would if written connectedly in that language. The Pyū is in characters of an early South-Indian script; some letters of the Sanskrit portion are somewhat different and traceable to the Gupta script of the 7th-8th century A.D. It is the longest legible inscription in Pyū found for many years. Figure *g* on Pl. LIV is only a portion of this document.

The following were brought to light at the same site :—

(*a*) A Buddha image in relief, seated in the *bhūmisparśa-mudrā* on a lotus pedestal ornamented with floral designs. On the left hand is placed what appears to be an alms-bowl. The principal figure is flanked by four standing personages, two on either side; the other two, owing to lack of room, have been carved each on one side of that part of the stone forming the back-ground against which the Buddha is sitting. Each of these four figures is holding a bowl in both hands. The scene represents the four

Lokapāla devas in the act of offering bowls to the Buddha. The foliage on either side of the halo represents the Bodhi tree under which the Master is seated.

(*b*) A scene carved on stone representing the Buddha partaking of the food offered him by the two merchants Taphussa and Bhallika. The back slab is broken off above the Buddha's head; the total height is one foot.

(*c*) A bronze figure of the Buddha, seven inches in height, seated cross-legged with both hands in the *vitarka-mudrā* (Pl. LIV, *b*).

(*d*) A finely modelled hand and head of the Buddha in bronze. The hair is arranged in the conventional curls (Pl. LIV, *e*).

Among the remaining objects found at the same site, were two pieces of elephant tusk completely rotten; they were found buried in the wall on the east side.

At another mound were unearthed many hundreds of terracotta votive tablets. The number of such tablets found in Hmawza within a few years is prodigious. The mound was situated near a tank in the Mahtaw village circle, about one mile and a half, as the crow flies, to the east-north-east of the previous mound. Here the exposed ruined building is circular in plan, with a diameter of 24 feet, and raised on slightly elevated ground. The upper part of the building has crumbled and there remains only a portion of the base. The whole building was probably similar in shape to the now still extant Bawbaw, Payagyi and Payama pagodas at Prome, of which an idea may be formed from the two miniature stūpas flanking the Buddha on the votive tablet shown as Fig. 1 on Plate LV, and found among the *débris* of this mound. Each of these ornamental stūpas is supported by a lotus on its stalk, and is shaded by an umbrella. The mouldings round the middle of the dome are very common on a large number of buildings in Pagan and may be seen on very much later monuments in Burma. The Buddha is in the common earth-touching attitude, seated within a trifoliated arch surrounded by a flamboyant design. Of the three panels forming the pedestal, the middle one contains a lion *couchant* seen full face, the head resting on the two front paws; the other two have each a flower-bowl placed on a stand. Above the Buddha is an umbrella surrounded by branches of the Bo-tree, and below these is a three-line inscription in Nāgarī which contains the well-known formula "Ye dharmā ...." etc., in mixed Sanskrit and Pāli. This beautiful tablet is indigenous; this is shown not only by the cast of the Buddha's features, but also by a short Pyū inscription impressed on its back (Pl. LVI. *d*). It reads; "ḅá: charke". "Charke" may be a name or a title; if a name, it was that of the donor of the tablet, and the whole may be translated: "Lord Charke." "Ḅá:" is an honorific particle which may be translated, according to the context, "Lord, holy, great," etc., and is generally used along with names of high personages, monks, and so forth, as: "Tḍa: ḅá:" =great king; "Tra ḅá: Sagasaivarabadi"=the holy monk Sagasi Varapaṇḍita". It is also found prefixed to names of the Buddha and Bodhisattvas:

"Yam ḅā: Bhagava"=this (is) the holy Bhagavā; "Yam ḅā: Buddha Arimedeya" = this (is) the Blessed Buddha Arimaitreya.

The tablets found at this mound are interesting from several points of view. Some are duplicates of those which have been found in many sites in the course of excavations conducted during previous years; but those that were discovered during the year under report form a more complete collection and are generally in a better state of preservation. Besides, some afford a datum which enables us to fix their date within a certain reasonable limit. With the object of reproducing them in one place, a representative selection has been made and appears in Pls. LV and LVI.

Figure 4 in Plate LV, unfortunately somewhat broken, is a terracotta illustrating a scene in the Buddha's career. In the upper portion is seated the Buddha in the *bhūmisparśa-mudrā*, on a throne the back of which is ornamented with a flamboyant design. He is flanked by four personages carrying parasols and other objects; the one on his right is Mahābrahmā. Whether the other three are also carrying parasols or other emblems cannot be ascertained. Below the Buddha's throne, there are five figures all kneeling and facing the principal personage, with hands clasped in adoration, except the last on the proper left. The three on the proper right are females, and probably *devī* or *śaktī*. The fourth figure, that is the first on the proper left, nearer the throne, has four arms and a halo round the head on which is a crown; this stamps the tablet as belonging to some Mahāyāna school. The two natural hands are brought up before the breast in the attitude of adoration; the other two are raised up on a level with the shoulders, and are each holding an unidentified object. The figure behind him has an animal head which very much resembles that of a horse; the right hand is raised on a level with the shoulder, and the left appears to be brought up against the breast. It is a *yaksha*, of the kind known as *assamukhī*. It is more difficult to identify the one with four arms. It may represent Vaiśravaṇa (Kubera), the King of the Yakshas. Kubera, as Vaiśravaṇa, is often depicted in human form, with four arms. He is the most prominent of the four Lokapālas. The Pāli Buddhist texts present him to us as well acquainted with the Buddha, eloquent in speech and learned,[1] and also as the frequent spokesman among the Devas. The scene may represent that episode in the Buddha's life when Māra and his hosts having been routed, the heavenly throngs came and sang the Buddha's praises. There is at the bottom one line or two of writing, but it is partially broken, and only a few much defaced letters remain.

The tablets shown as figures 3, 5 and 7 in Plate LV are not new, similar ones having been found in previous years; but the present ones are better preserved, and contain a short inscription which, for the first time, gives us a clue to their country of origin and their probable date. Figure 3, with many figures and ornaments crowded around the Buddha, bears a legend

[1] *Cf.* Vessavaṇo pana'ssa Dasabalassa vissāsiko kathāpavattane byatto susikkhito. *Commentary on Pātheya-suttam*, Burmese edition, Rangoon, p. 125.

in Pyū script which may be read as follows:—"Bá: ro: Chorye Cho". Another tablet which is almost identical reads: "Bá: Chorye Cho". From the characters it may be deduced that these two tablets belong to the 9th-10th century. In both the robes of the Buddha are well draped and seem to shew influence from the region of Amarāvatī. The Pyū legends leave no doubt as to their having been modelled in old Prome.

Figures 2 and 8 in Plate LV, probably hail from Nālandā; figure 8 is the standing figure of the goddess Tārā, with a Nāgarī inscription around it; No. 2 represents the Buddha flanked by two Bodhisattvas, and has also a legend in Nāgarī below the Buddha's throne; both these legends contain the formula: "Ye dharmā hetuprabhavā, etc.", in characters which may be assigned to the 9th-10th century.

In one of the tablets, the Buddha is seated in the *Dhyāna-mudrā*, an attitude which is met with comparatively seldom in Burma, while in another he is seated with the right hand resting on the right knee and the left on the lap. The tablet, No. 6, Pl. LV, contains many minute seated Buddhas; a corner is somewhat broken, and there are 83 figures as it stands; this tablet is meant to represent the One Thousand Buddhas.

One unique oblong tablet, bearing a seated image with crowned head and nimbus, was found at the same site. It is $3\frac{1}{4}''$ in height and $2\frac{1}{2}''$ in breadth; nearly the whole of the lower half is filled with an inscription which appears to be in the Pyū script. Unfortunately, the writing is very much defaced and almost obliterated. The figure appears to have four hands, and no doubt represents a Bodhisattva; it is difficult to distinguish the exact positions of the hands or the objects held therein. From the few words still decipherable. the language of the inscription appears to be in 'mixed Sanskrit'. This tablet is the first of its kind found in Burma.

Another mound yielded some interesting sculptures. They are in relief and carved on soft stone. Unfortunately they were broken in many fragments and the parts recovered did not make a complete whole; however, enough details are left to enable us to form an idea of the subject represented. The best and most perfect, the fragments being pieced together, is shown as figure 10 in Pl. LV. It may be divided into three superposed panels. The middle is occupied by an image of the Buddha flanked by two disciples. The Buddha is seated cross-legged on a lotus in the *dharmachakra-mudrā* within an arched niche surmounted by a *śikhara* crowned by a stūpa, the latter filling up part of the space of the upper panel. The attendants in monastic robes, are kneeling with their hands joined together in the attitude of adoration and are also on lotuses within arches. In the lower panel, immediately below the Buddha's lotus-throne are two *couchant* deer each on a lotus and facing each other with the symbolical wheel or *dharmachakra* between them; this places the scene in the Migadāya near Benares. By the deer are two three-headed figures wearing *mukuṭas*. Both are kneeling on stools and hold in their hands objects difficult of identification; they are Mahābrahmās. Below the *couchant* deer are two other figures, probably devotees, each holding an object

placed in a vase the stand of which rests on their slightly raised knee. They are scantily clad, wearing only a short *dhoti* and a fillet, perhaps the sacerdotal thread, the hair is collected into a chignon at the back of the head, somewhat like that of certain figures in the sculptures of the Ānanda temple at Pagan. The uppermost panel is divided, by the *śikhara* over the central Buddha, into two compartments, in each of which are two standing figures. The corner of the compartment is broken off, so that the head of one figure and the upper part of the body of the other are missing; but they appear to be duplicates of the other two on the left. The inner figure in either compartment is the Buddha in the *vitarka-mudrā*. The other figures, with a *mukuṭa* and two visible heads, are Mahābrahmās. The objects they are holding are indistinguishable. From the cast of the countenances, this sculpture appears to have been made locally and to be an example of Pyū workmanship. In the absence of any certain data, it is not easy to assign an age to it, but it is probably not earlier than the 10th-11th century A.D. The building delineated over the central figure is interesting in that it recalls similar monuments now extant in Pagan but which do not antedate the 11th or 12th century.

At the same mound was found another piece of sculpture unfortunately badly broken. It is still, however, useful as a document for the early religious history of Burma. It represents a Buddhist triad carved in relief on three sides of a rectangular block of stone (Fig. 9, Pl. LV). This triad is no doubt the not uncommon one of the Buddha with Maitreya and Avalokiteśvara.

There remains only one piece of sculpture worth noticing; like most sculptures found in Old Prome, it is broken; the head has disappeared and a portion of the slab is missing on the left. It was found on opening up a mound on the Leyindaung hill. The principal figure, no doubt that of the Buddha, is seated with the right hand in the *varada-mudrā*, the left resting in the lap. He is flanked on the left by a disciple with the hands joined in adoration. The figure on the right is broken and only a portion of it is preserved. Beneath the central image are seven figures, with short locks of hair; they are arranged in two rows, three in front and four at the back. In the front row, beginning on the left, the first figure is playing on a harp; the central one is performing a lively dance, the right arm thrown across the breast and the left raised with the hand above the head; the third is clapping hands. On the back row, the one on the left is broken: the bodies of the next two are hidden, but the first seems to be whistling and the other singing. The figure on the extreme right appears to be a female; she is naked from the waist upwards. All these figures may be musicians and dancers; such scenes are met with sometimes in Indian sculptures. They may perhaps also represent Gandharvas, in the scene of the *abhisambodhi*, when the heavenly hosts came down to praise the Buddha, in which case the figure with the harp may be identified with Pañcaśikha, the most famous of them all.[1]

[1] *The Jinālaṅkāra* (J. Gray, London, 1894, p. 40) is more explicit here than the *Nidānakathā* :—

Tatha naccanti gīyanti seḷenti vādayanti ca devā dasasahassamhi tuṭṭhatthā pomoditā.

The *Jinālaṅkāraṭīkā* (Burmese edition, Rangoon, p. 260) glosses: *Pañcasikho devaputto tiṃāvutam beḷuvapaṇḍuvīṇam ādāya bahugandhabbadeve parivāretvā gandhabbam kurumāno ṭhito.*

On excavating a mound in a field south of Taunglôn-nyo village, the remains of a building very similar in plan to a class of temples extant at Pagan were brought to light. It consists of a *vimāna* with a pedestal near the centre and preceded by a porch. The main entrance faces east, and the door sills at the entrance of the porch and the main shrine were made of large blocks of sandstone. The walls were thick and pierced with door and window openings with segmental arches. From the remains of a few of the latter, it is evident they were built of voussoir-shaped bricks in the radiating form, the bricks being laid edge to edge. A few niches were left almost intact; they are ornamented with foliated arches surmounted with the flamboyant motif, many examples of which may still be seen at Pagan. The interest of such finds lies in the question whether some of the monuments at Old Prome were not the prototypes of similar ones at Pagan. From the testimony of the Burmese chronicles themselves, we know that during the reign of Saw Rahan of Pagan (931—964 A.D.), deputations were sent to Thaton and Prome to take the plans of buildings there with a view to reproducing them in the Burmese capital; the result was five temples erected at or near Pagan, on these plans. The architectural activity at this latter place, which covered it with such diversified and magnificent monuments, began in the second half of the 11th century only, when numerous prisoners of war from Thaton and Prome, including all sorts of artisans and artists, masons, architects, etc., were brought over to Pagan. But the five temples, if still extant, have never yet been identified.

At another mound, situated at Thaungbyegôn, a small conical stūpa, 11′ 9″ in height, was found encased within a larger one. The latter was in a very ruinous condition, and all traces of its external form had disappeared. The small stūpa within it was found to be almost intact. It consists of a bell-shaped dome with a moulding round its narrowest part resting on circular terraces. The dome is surmounted with seven diminishing rings of mouldings, fillets alternating with beads; and a lotus bud-shaped *āmalaka* projecting from the midst of two layers of lotus petals crowns the top (Pl. LVI, *b*). Another very similar stūpa also encased in an outer building, was found near the same site during the winter of 1925-26; it had been built over certain cremated remains. The present stūpa has a relic chamber beneath its foundations, but nothing, except earth and *débris*, and a small headless image of the Buddha in black stone, was found.

Three other adjacent mounds were opened at the same time. In one was found another encased stūpa in a bad state of preservation. The portion above the dome had crumbled and the first course of bricks in layers was found just a few inches below the surface of the top of the mound. What remains consists of a dome with a band of mouldings round the centre, resting on a terrace ornamented with lotus leaves. A battlemented parapet was round the base, and the whole rests on two square terraces.

In the second mound there was no stūpa, but only a pedestal, 2′ 10″ in height, formed of receding layers of bricks; in the third was discovered a plain stone slab 4½′×3½′×5½″.

The stūpas, the pedestal and the stone slab were built over relic chambers which, having been rifled, were found empty. One interesting feature, however, of these excavations is that each of these small stūpas and its outer pagoda-casement appear to have been built at one and the same time and not at different periods. A certain number of these encased stūpas, some divested, by the care of this Department, of their ruinous cover, and some with part of it still intact and strong, may still be seen in Pagan. I think that cases of similar encasing have been met with in Siam and Laos.

Three other mounds were examined at Kalagangôn where, last year, some of the most important finds in Burma were made. Two were situated near Kin Ba's land, and the third on the other side of the old city wall across the moat. The first two consisted each of a rectangular platform enclosed within four retaining walls, and there were many fragments of roof-tiles scattered about; these were probably the remnants of wooden buildings or sheds generally erected near a pagoda. The third mound, on the other side of the wall, seems to be the ruins of a beautiful monument; unfortunately, time, weather, treasure-hunters and brick-collectors have left it in a ruinous state, and nothing much is left of the original building. An idea may be formed of its wealth of decorations by the terracotta plaques, each 16″ square, ornamenting the terrace wall round the building. Each plaque, bearing an animal and a rider, is set in a panel within fillet and pellet mouldings. They have deteriorated very much and it is difficult to identify the animals or their riders.

In the centre of the mound, the remains of a circular stūpa were found, twenty-five feet in diameter at the base, but only five feet of it standing above the surrounding pavement. A shaft ten feet square was sunk in the centre of this stūpa to a depth of 17½′, when the original soil was reached, but nothing of any importance was found. Outside the building proper, around the pavement and a few feet below the surface, there were found a cornelian bead, about the size of a chestnut and a jade one ⅜″ in diameter. They must originally have formed part of the objects buried in the relic chamber and been overlooked by treasure-hunters.

Among the remaining mounds excavated in different places, five may be considered as forming a class by themselves. They were greater in length than in breadth, and one end was higher than the other. The remains uncovered in these mounds were structures built up in tiers receding towards the top in the form of terraces. Around these terraces and a few feet below the surface of the mounds, were found many earthenware vessels of various sizes and shapes containing earth and fragments of charred bones. These urns have now become quite familiar to us, and add nothing to our knowledge of the burial customs of the people once inhabiting the land. In bygone years funeral urns in stone and baked clay were found bearing inscriptions in Pyū, but among those found at these sites, none bore any trace of writing. All were of clay save one, a copper cylindrical casket (Pl. LVI, *c*). It has a cover with a knob in the centre, and seems to have originally been gilded. The body is 9″ in height and 9″ in diameter; its contents, after being washed.

were as shewn in Pl. LVI, *e*. It no doubt contained the remains of some important personage, and was found in a mound about two hundred feet to the south of a tank known as the Payingan Tank, near the Mahtaw village, among many other earthenware urns, a few of which are shewn in Pl. LVI, *a*.

The remaining excavated mounds proved to be sites of pagodas; but they were completely ruined. In some cases the plan could still be traced, but in the one known as Pokun-kôn and in the three mounds on the Leyindaung Hill, mentioned earlier, even such traces had been obliterated. Two buildings unearthed near the Kan-wet-khaung-kôn, were octagonal in plan, and one at Me-luntaung-kôn, had a square base with a rectangular chamber.

Bricks with mason marks consisting of Pyū numerical symbols, and terracotta votive tablets bearing effigies of the Buddha were found at most of these sites. A collection of bricks with numerical symbols is being made for further study; the great majority of the votive tablets call for no particular mention.

SECTION III.—EPIGRAPHY.

SANSKRIT EPIGRAPHY.

By Dr. Hirananda Sastri.

Decipherment of Inscriptions.

Āṟunāṭṭār Cave inscriptions.

In the year under review several important inscriptions have been brought to light, mostly by the members of the epigraphical branch of the department and by Mr. J. A. Page, Archæological Superintendent, Central Circle, Patna, during his explorations at Nālandā. The earliest of these inscriptions are written in the old Brāhmī script and palæographically synchronise with the Mauryan period of Indian history. They are incised in three caverns cut in the north and south faces of ĀṞUNĀṬṬĀR, a hillock standing some two miles away from the Pugaḷūr Station on the Erode-Trichinopoly branch of the South Indian Railway. Apparently, they must be labels which give the names of persons who caused the excavations to be made or occupied them for the first time. Several inscriptions of this kind were found during previous years and have been noticed in the Annual Reports on South Indian Epigraphy and elsewhere. What they actually signify is still an open question. Mr. K. V. Subrahmanya Ayyar, Superintendent for Epigraphy, has attempted to solve it and offered an explanation which appears quite plausible. He thinks that they not only contain the *ṉ*, *ḻ* and *ṟ* symbols which are exclusively Dravidian or Tamiḻ, but Tamiḻ suffixes also and must therefore be Tamiḻ records, in spite of the several words of Sanskritic origin found in them. That the symbols in view represent only these and no other sounds and that the records really give Tamiḻ suffixes are, however, to be corroborated by independent evidence before this hypothesis can be accepted as established. The inscriptions discovered during this year are six in number and belong to what is known as the Koṅgu country, *i.e.*, the modern Coimbatore district and the southern part of Salem. One of them, Mr. Ayyar reads *Karuvūr poṉ vāṇikaṉ............atiṭṭāṉam* and translates as "the ascetic abode of..........a goldsmith of Karuvūr". If his reading is correct, the inscription would be of special interest in that it mentions Karuvūr, the modern Karūr, and thereby shows that it was a place of note about the 3rd century B.C.

Silaharā Cave inscriptions.

Next in date are the cave inscriptions at SILAHARĀ in the Rewah State of the Central India Agency, which I examined last winter. The existence of one of these records was brought to my notice by Rai Bahadur Hiralal, who

obtained a rubbing of it from a schoolmaster more than twenty years ago. Silaharā is a group of artificial caves standing on the eastern bank of the Kevāīṅ rivulet (Plate XXXVIII, 5). The situation is highly picturesque. The name seems to have been derived from *Śilāgṛiha* (*i.e.*, mountain-house), which, according to the inscriptions under notice, must have been the original appellation of the excavations. The caves are about 16 miles towards the north-east of Jaithāri, a rising station on the Katni-Bilaspur branch of the Bengal Nagpur Railway, lying between Latitude 23° 2′ N. and Longitude 81° 50′ E. There is no metalled road leading to these excavations and they are most conveniently reached by village tracks, from Jaithāri to Kukurguḍā and thence to Dārsāgar, whence Silaharā is about two miles distant. They do not appear to have been noticed anywhere, though the caves at Mara (Mur of the maps) which are somewhat similar in design but possessed of no epigraphical value, have been described by Cunningham.[1] At present, Silaharā shows four caves and traces of at least one more. Only two are complete, *viz.*, the Sītāmaḍhī cave and the Durvāsā cave. The third cave called Cheri-Godaḍī has a large hole in the roof of one of its cells but is otherwise fairly well preserved. These three caves contain inscriptions, some of which are written in shell characters and the rest in the Brāhmī script of about the 2nd century A. D. Whatever carving or painting there might have existed in the caves has peeled off. The Sītāmaḍhī cave has some fragmentary images lying in one of its cells but they are obviously extraneous and later in date.

The inscriptions in these caves, which are written in the Brāhmī alphabet, are more or less identical in substance and give the name and the pedigree of the founder of the Śilāgṛiha, *i.e.*, the caves under notice. The one in the Sītāmaḍhī cave is unfortunately damaged and worn. The first line of it seems to mention some ruler under whose orders the caves were executed, while the word *vachharē* which is also preserved would indicate that the record was dated. The real founder, however, as is definitely stated in these inscriptions, was an *amātya* or minister whose name, as given in the Cheri-Godaḍī cave inscription, was probably Mūladēva (?) whom these epigraphs describe as the great-grandson of Śivanandi, grandson of Śivadata and son of Śivamita and Mōgali. For want of details the identity of these persons cannot be established. The names Śivamita and Śivanandi, however, would remind us of Śivadata, Śivapālitā, Śivabhūti, etc., of the Kudā cave inscriptions and like them might have been borne by some Śaivas or worshippers of Śiva. Save for these names, the caves possess no sectarian characteristics. The inscriptions written in shell characters form an interesting feature of these caves. Such records have often been found along with old Brāhmī epigraphs at Rājgir and other places but have not yet been deciphered. It is not unlikely that the Silaharā inscriptions with the associated Brāhmī epigraphs might supply a clue to their interpretation. Such a combination occurs on a pillar in the Sītāmaḍhī cave where are two short inscriptions, one above the other, one of

[1] *Archæological Survey Reports*, Vol. XIII, pp. 20ff.

which is written in shell characters and the other in the late Brāhmī script of about the 3rd or 4th century A. D. An intervening arrow seems to suggest that the two records are connected or, what is equally possible, that one is a translation of the other. The inscription above the arrow seems to read [*Yu*]*vā ni*[*r*]*mala*[*ḥ*] meaning "youthful and pure." This phrase cannot be regarded as a complete document by itself, and the one or the other alternative must be correct unless, of course, the shell engraving is a mere ornament with no epigraphical value. The other Sanskritic inscription found in this cave seems to read *Udayat*[*ī*]*ra* and is palæographically later in date. It is incised on the eastern wall of the pillared hall of the cave.

Nālandā inscriptions.

Of the very valuable documents unearthed by Mr. Page at NĀLANDĀ, the copper-plate which purports to be the charter of SAMUDRAGUPTA, the great Gupta Emperor of India, issued from his victorious camp at Nṛipura, would have been the earliest copper-plate inscription of the Gupta period yet found, had it been genuine. The inscription gives the second day of Māgha and the fifth regnal year of Samudragupta as its date, and has no seal attached to it. Gopasvāmin, the *Mahā*[*pātra*]*pati* and *Ākshapaṭalādhikṛita* (*i.e.*, the great minister and officer appointed to the duties of the depository of legal documents), is mentioned in it as the officer under whose order it was written and it ends with the name of the illustrious Chandragupta, evidently the son and successor of Samudragupta. Owing to its very bad preservation, most of its lines have lost several of their letters and the details regarding the grant as well as the grantee cannot be ascertained definitely. The fifth line seems to mention Pushkaraka as the name of the gift village. In tenor, script and language, the document is practically identical with the Gayā copper-plate inscription which was published by Fleet. As in the latter document so in the one under notice, the epithets of Samudragupta from *Sarvva-rājōchchhēttuḥ* (line 1) to *Lichchhivi-dauhitrasya* (line 4) are given in the genitive case, but *Kumāradēvyām-utpannaḥ Paramabhāgavatō mahārājādhirāja-śrī-Samudraguptaḥ* in the nominative case. Obviously, therefore, this new plate must also be treated as spurious.

Mr. Page's finds of the year also include a copper-plate of DHARMAPĀLADĒVA, the great Pāla king of Bengal. It is to be regretted that the major portion of this document, especially that which must have contained the date, is hopelessly defaced. Like the Khālimpur plate this has also a seal soldered at the top which gives the legend *Śrīmān Dharmapāladēvaḥ* engraved in relief in one line below the *Dharmachakra*. The obverse has 24 lines of writing. On the reverse, some twelve lines can be counted, though traces of letters show that there must have been more lines towards the top. The readable portion of the record seems to be written in Sanskrit prose throughout. Unlike the Khālimpur grant, it starts in a business-like way with (*Ōṁ* ?) etc., ... *sampatty-upātta-jaya-śabdaḥ*, making no mention of the Vajrāsana (*i.e.*, Buddha). The name of the place of issue was

inscribed after the words *jaya-śabdaḥ*, but is not distinct, though the words *vāsakāt śrīmaj-jaya-skandhāvārāt* after it can be read with certainty. That it is a charter registering the gift of a village by Dharmapāladava seems to be clear. though the name of the grantee and that of the gift village are difficult to make out. The name of the donee's father, however, is clear and reads Dharmadatta (sixth line from the bottom on the reverse side). It is also clear that the village granted lay in the Gayā district (*vishaya*) and in the Nagara division (*bhukti*).

Earlier in date, and, under the circumstances more interesting, documents are the terra-cotta seals, especially those of Śarvavarman Maukhari and of Harsha of Thānesar because, in the absence of the originals of the Asīrgaḍh and the Sōnpat seals which have been irretrievably lost, they are helpful in settling their readings indubitably. The seal of Śarvavarman found by Mr. Page is quite complete and resembles the Asīrgaḍh seal, though the emblems are slightly worn. Mention may also be made, in passing, of a small terra-cotta seal with Gajalakshmī in the field and the legend:

Magadha-bhuktau Kumār-āmāty-ādhikaraṇasya

written in the Gupta script of about the 5th century A. D. and the votive inscription on a metal image which is dated in the third regnal year of Dēvapāladēva, the well-known Pāla king of Bengal.

Other noteworthy inscriptions found during the year are noticed under the respective circles.

Kanarese inscriptions in the Bombay Presidency.

Two hundred and seventy-one inscriptions scattered in different taluks of the Dhārwār and the Bijāpur districts of the Bombay Presidency were examined and copied by the Assistant Superintendent for Epigraphy, the Junior Assistant and the Reader in my office.[1] The majority of these records, excepting those which are unassignable to any particular dynasty, belong to the Western Chālukyas of Kalyāṇi. The rest represent several rulers of various dynasties, such as the Rāshṭrakūṭas, the Kaḷachuryas, the Sindas of Yelburga, etc. The earliest Rāshṭrakūṭa record, copied in the year, refers to the reign of Amōghavarsha I. Of Kṛishṇa II, the collection contains a record dated in Śaka 834, expired (*i.e.*, 912 A. D.), which seems to be the last known date of his reign. Next in chronological order comes a well-preserved inscription of Gōvinda IV, whom it mentions by the title of Suvarṇṇavarsha. It registers a gift of gold by Baḷḷajja, the *gāvuṇḍa* of Kovujagere (the modern Kaujageri), to the temples and the *maṭhas* constructed by him at Beḷvaṇige and Yāvuṅgal in Śaka 855 (=A. D. 933). An inscription from Sāvaḍi which is dated in the

[1] A descriptive list of these inscriptions will appear as an Appendix to the *Annual Report on South Indian Epigraphy* for 1927-28.

Śaka year 891 and belongs to the reign of KOṬṬIGADĒVA, mentions the Gaṅga subordinate MĀRASIṄGHA PERMĀNAḌI (II) as the governor of the district of Kisukāḍ-seventy and registers some grant by Chellayya to the temple of Bhagavatī which he had himself built. Among the epigraphs of the Western Chālukyas of Kalyāṇi, a few require special notice. One of them is the stone inscription of the reign of JAGADĒKAMALLA JAYASIṀHA II dated in Śaka 955 (=A. D. 1033) which mentions a subordinate named Nāgatiyarasa of the family of the Sindas of Bāgaḍage. The Ālur inscription which shows that *Daṇḍanāyaka* Vāsudēvayya, an officer of TRAILŌKYAMALLA SŌMĒŚVARA I was the son of Kāḷidāsa, the *Maneverggaḍe* (steward) of Kīrtivarman, is also noteworthy. The Kāḷidāsa of this record is, perhaps, identical with the homonymous subordinate of the Kadamba king Kīrtivarman II. An inscription copied at Sirūr, the old Śrīpura, in the Bagalkot taluk mentions a queen of Sōmēśvara named LĪLĀVATĪ, who was probably not known before. Ballavarasa, a subordinate of Nimba-Daṇḍanātha described as a *nūtana-Mudrārākshasa* to SŌMĒŚVARA (II), is stated in the record of Śaka 997 (A. D. 1075) to have granted the village of Bādubbe-pāḷu for the maintenance of students in the *maṭha* attached to the temple of Svayambhu-Nagarēśvara of Vikramapura, when the king was camping at Taṅgoḍage on the northern bank of the river Perddore (*i.e.*, the Kṛishṇā). The Taṅgoḍage of this inscription must be identified with the modern Taṅgaḍagi in the Muddebihāḷ taluk of the Bijāpur district. The two epigraphs which were copied at Uṇachagēri and Kuṇṭōji in the Ron taluk, also deserve special notice. Both of them are dated in the same year, *viz.*, Śaka 994, *i.e.*, 1072 A. D. The one from Kuṇṭōji belongs to the reign of BHUVANAIKAMALLA SŌMĒŚVARA II and the other which comes from Uṇachageri to the reign of his successor VIKRAMĀDITYA VI. This fact would show that Vikramāditya, who is known to have deposed his elder brother and succeeded to the throne in 1076 A. D., must have proclaimed himself king so early as 1072. In this connection we have to remember that, according to the inscription at Nīralgi in the Hangal taluk, Vikramāditya VI was only a *Mahāmaṇḍalēśvara* under his brother Sōmēśvara II in 1074. Both these inscriptions, therefore, would contradict each other unless, of course, we suppose that in 1072 A. D. Vikramāditya VI was unsuccessful in his attempt at securing the sovereignty. The inscription of Tribhuvanamalla Vikramāditya VI, which is dated in the Chālukya-Vikrama year 51. Parābhava, Māgha, śu. di. 5, Wednesday, is interesting for it would indicate that this king's rule lasted till 1127 A. D. and not till 1126 only as was supposed hitherto. The Sirūr inscription copied in the year acquaints us, for the first time, with TRIBHUVANAMALLA BHĀGALA-DĒVĪ, the queen of Vikramāditya VI, and also with her maternal uncle (*māva*) *Perggaḍe* Mārttaṇḍayya. We may mention, in passing, a record of Sōmēśvara III which reveals the name of Tikkappaya, a feudatory of that ruler and another of Jagadēkamalla II which mentions a feudatory named Kuppadēvarasa who appears to be a scion of the Yādava family. The latter is not dated but gives the cyclic year Prabhava and might be ascribed, on that account, to A. D. 1147.

Three YĀDAVA kings of Dēvagiri, namely, SIṄGHAṆA, MAHĀDĒVA, and RĀMACHANDRA are represented in the collection. An inscription of Siṅghaṇa dated in Śaka 1128 (=A. D. 1206) and mentioning a Brahman subordinate named Sahadēva-Daṇḍanātha of the Sahavās-ānvaya (family), is interesting in that it describes his ancestors as hailing from Kashmir. The epigraph at Dōṇi enables us to fix definitely the date of Siṅghaṇa's rout of Ballāḷa II and recovery from him of some of the territories lying to the south of the Malaprabhā and the Kṛishṇā, for it says that the 16th year after this event was the cyclic year Vyaya (1226 A. D.) and thereby shows that this success was achieved in the year 1211 A. D.

The earliest SINDA record in the collection belongs to the cyclic year Vyaya and the Śaka year 1088 (=1166 A. D.). It registers the gift of certain incomes to the temple of Telligēśvara by the 50 Telligas with the approval of Chāvuṇḍarasa, *i.e.*, CHĀVUṆḌA II who was a governor under the Kaḷachurya king Bijjaṇa. Another inscription of the same governor which is dated in the cyclic year Pārthiva, specified in it as his 10th regnal year, was also secured. Both these records would indicate that Chāvuṇḍa II began to rule in the Śaka year 1077 (=1155 A. D.). The third inscription requiring notice is the one which comes from Beṇachimaṭṭi in the Ron taluk and mentions BIJJAṆA with his brother VIKRAMĀDITYA as governing in the Śaka year 1109. As the latest date for these personages, so far known, was Śaka 1102. this record will extend their rule by 7 years.

Publications—The Epigraphia Indica.

Six parts of the EPIGRAPHIA INDICA, *viz.*, part viii of Volume XVII, part vii of Volume XVIII and parts i to iv of Volume XIX were passed for final printing, though only the first three were actually issued in the year under review. The latter contain 17 complete articles. Part viii of Volume XVII appears under the name of my predecessor, the late Rao Bahadur Krishna Sastri and completes the volume with an index. Dr. Hultzsch's article on the two Kūram plates published in this part gives the revised text and translation of the important record which was originally published in volume I of the *South Indian Inscriptions* (Texts and Translations) series in 1890. Mr. Radhagovinda Basak's article on a copper-plate inscription of the time of Kumāragupta I not only makes considerable improvement on the previous edition of the document brought out in 1909 in the *Journal of the Asiatic Society of Bengal*[1] but elicits interesting information regarding the purchase of a *kulyāvāpa* of land with the right of alienation, showing at the same time that the plate is not an ordinary royal land grant but a sale deed registering the purchase of some land for the purpose of donation. Mr. Bhattasali has contributed an interesting article on *Some image inscriptions from East Bengal* written in characters of about the 10th century A. D. These inscriptions are very

[1] Volume V, No. 11, pp. 459-61.

useful for the sculptural as well as the religious history of Bengal. The point which is chiefly noteworthy in Mr. Bhattasali's contribution is his explanation of the initial symbol usually read as *Ōṁ*. According to him, it should be read as *siddhir-astu*. His hypothesis is supported by the fact that the symbol appears side by side with the sign for *Ōṁ*, which could not have been the case had the connotation been one and the same. His view will be further substantiated by the fact that in the Tamiḷ-*nāḍu* children start their alphabet with this symbol, which is there called *Piḷḷaiyār-śuḷi*, *i.e.*, Ganēśa's curl, Gaṇēśa being invoked for success at the commencement of every undertaking, and that in Northern India the first formula generally taught to Hindu children is *Ōṁ namaḥ siddham*. A few of the inscriptions dealt with by Mr. Bhattasali enable us to locate the ancient kingdom of Samataṭa, and some confirm the information supplied by other documents regarding the Khaḍga dynasty that ruled over it towards the end of the 7th century A. D. A short note by Mr. Dikshit published in this part points out the identity of Pṛithvīshēṇa of the Gañj and the Nachna inscriptions with the Pṛithvīshēṇa II of the Bālāghāṭ plates who was the great-grandson of the Vākāṭaka queen Prabhāvatiguptā, instead of with Pṛithvīshēṇa I, who was her father-in-law. Part vii of Volume XVIII contains, besides the continuation of Rai Bahadur Hiralal's paper on the Bhañjas and a part of the article on the Polonnaruva inscription of Vijayabāhu I, by Mr. Paranavitane, eight informative articles, three by the late Dr. Hultzsch, and one each by Dr. Barnett, the late Rao Bahadur Krishna Sastri, and Messrs. Diskalkar, Madho Sarup Vats and K. N. Dikshit. The late Dr. Hultzsch's contribution on the Tekkali plates of Dānārṇava's son Indravarman dated in the year 100 5 4, (*i.e.*, 154 of the Gāṅga era) proves very valuable in verifying the dates of some of the earlier Gāṅga grants he has enumerated in it. The grant of Jayasiṁha II he has dealt with, records a gift of land by the *Mahārāja* Sarvalōkāśraya Jayasiṁha-Vallabha, the son of the *Mahārāja* Sarvalōkāśraya and grandson of the *Mahārāja* Vishṇuvardhana whom it mentions as an ornament of the family of the Chaḷikyas. This Jayasiṁha must be the Eastern Chālukya king Jayasiṁha II, the eldest son and successor of Sarvalōkāśraya (Maṅgi-yuvarāja) and the grant under review is the first of his charters that has yet come to light. The late Rao Bahadur Krishna Sastri has dealt with the Koḍavali rock inscription of Chaṁḍasāti, which was edited by Dr. Konow some years ago. While revising the previous edition, he opined that the portion of the record containing the date gave both the month and the *paksha* and that the date of the inscription was *Mārgaśirsha bahuḷa prathamā*, the second year of Chaṁḍasvāti. To this note is appended a postscript comprising Dr. Konow's criticisms on the Rao Bahadur's reading and interpretation. Mr. Diskalkar in his note on the Betmā plates would distinguish, possibly correctly, the expression *Kōṅkaṇa-grahaṇa-vijaya-parvaṇi* as used in these plates from *Kōṅkaṇa-vijaya-parvaṇi* of the Banswara grant saying that the one was meant to commemorate the occupation and the other only the conquest of Koṅkaṇa by Bhōjadēva, the celebrated Paramāra king of Dhārā, who issued these

charters. Mr. Madho Sarup Vats's article on the thirteen unpublished votive inscriptions in the Chaitya cave at Karle would show the extent of the outlying parts from which the caves attracted donating pilgrims.

Mr. K. N. Dikshit's article on the Deopāni Vishṇu image inscription, is valuable for the history of sculptural art in Assam. The inscription, on palæographic considerations, can be relegated to about the 9th century A. D. and the statue which bears it is, according to him, the only early example of an inscribed image yet found in Upper Assam. Part i of Volume XIX contains five complete articles. Of these, one is by Dr. Sten Konow and another by me, two by Dr. Barnett, and one by the late Mr. Tarini Charan Rath. The Zeda inscription with which Dr. Konow deals in this part was edited by Cunningham, Senart and Boyer long ago, and some remarks on its date and interpretation were also published by several eminent epigraphists including Dr. Konow himself. The record is, no doubt, a difficult one, but Dr. Konow, with his usual care, gives a very satisfactory reading and interpretation of it. It appears to give a fuller dating than is usually the case in Kharōshṭhī records, the name of the *nakshatra* Uttarāphalguna being mentioned as current on the 20th Ashāḍha. This fact, Dr. Konow thinks, would indicate that the months referred to in the reckoning used in the record were *pūrṇimānta*, for Uttarāphalguna belongs to the *śukla-paksha* where it may occur between the fifth and the eighth days. The *pūrṇimānta* reckoning, he says, is ancient Indian and the counting of all the days of the month as a continuous series seems to be of foreign origin. That the era used in the record is the so-called Kanishka era has never been doubted though there is no consensus of opinion about the nature and the initial point of its reckoning. In Dr. Konow's opinion, the date of the Zeda record is 19th June 139 A. D. according to which the initial date of the Kanishka era would be A. D. 128-129.

The Barah copper plate of Bhōjadēva dated *Vikrama* Samvat 893, which I have published in this part, proves to be the earliest record of the ruler so far discovered and would take the long period of his reign back from about 840 to about 836 A. D. The way in which the document is dated is noteworthy in that the letters *srō* and *hrā* are used to indicate 800 (100×8). The Mamdapur inscription of the reign of Kanhara which Dr. Barnett has edited in this part describes the exploits of the kings of the Yadu race including those of Kanhara. It also gives the genealogy of the donor Chāuṇḍa, enumerating, at the same time, his heroic deeds and benefactions. His next article deals with the two inscriptions from Kolhāpur and Miraj, both being mostly written in Kanarese prose. One of them mentions the construction of a Jaina temple at Kavaḍegoḷḷa by one Nimbadēvarasa and of the making over of some revenues by the corporation of the Vīra-Baṇañjas for its maintenance, and the other some grants to the temple of Mādhavēśvara (Śiva) in Seḍambāḷ which had been built by one Mādirājayya. The late Mr. Tarini Charan Rath's article on the Antirigām plates of Jayabhañjadēva, the son of Raṇabhañjadēva and grandson of Vīrabhañjadēva of the Bhañja dynasty, appearing also

in this part will be useful for the elucidation of the early history of Orissa.

The South Indian Inscriptions Series.

As reported by the Superintendent for Epigraphy, part iv of Volume III of the SOUTH INDIAN INSCRIPTIONS (Texts and Translations Series) and Volume VI of Texts were in the press. The former contains an index, *addenda* and *corrigenda* besides text and introduction. Of these, two proofs were received and returned to the press, after correction, for final stitched proof. The index to the part under publication was also drawn up and incorporated in the general index which was verified with reference to the previous parts. Second and third proofs of Volume VI were corrected and passed for final printing. To this volume were added *addenda* and *corrigenda,* table of contents, and a short preface. Transcripts of 352 inscriptions were also prepared during the year for Volume VII.

Miscellaneous Epigraphical Work done in Circles and Museums.

The following is a brief account of the epigraphical work done in some of the Circles of the Department, the Archæological Section of the Indian Museum, Calcutta, the Peshāwar Museum and the Rājputānā Museum, Ajmer. It is based on the information which was supplied by the officers concerned. The Frontier Circle is noticed under "Peshāwar Museum". The Superintendent, Hindu and Buddhist Monuments, Northern Circle, has no epigraphical work to report. The noteworthy inscriptions found in the Central Circle during the year have already been mentioned.

EASTERN CIRCLE.

In the Eastern Circle, a highly interesting copper-plate was found when the circumambulatory passage on the second terrace of the main temple mound at PĀHĀRPUR, District Rajshahi, Bengal, was explored. According to Mr. K. N. Dikshit's report, it is dated on the 7th day of Māgha of THE YEAR 179, apparently of the GUPTA ERA, and records the purchase, by a Brahman couple, of fallow lands lying in four villages and their donation to a Vihāra presided over by a succession of some *Nigrantha* monks. One of these villages, *viz.*, Vaṭa-Gōhālī, he would identify with Gōāl-bhiṭā, which stands to the west of Pāhārpur. The *Āyuktaka* or district officer at Puṇḍravardhana (the modern Mahāsthān), and the City Council presided over by the chief town merchant (*Nagaraśrēshṭhin*), he says, are the authorities mentioned in the charter as sanctioning the transaction and ordering the Village Elders to mark out the grant lands which are specified in accordance with the measures of grain current in that part of Bengal during the period.

Besides this interesting document Mr. Dikshit has found several terracotta seals. which, on palæographical grounds, he assigns to 10-11th century

A.D. One set of these seals, he says, refers to two private individuals, namely, DHARMASĒNA and SIṄHASĒNA. Another set, which seems to be more important, bears the legend *Śrī-Sōmapurē Śrī-Dharmapāladēva-mahāvihārīy-ārya-bhikshu-saṅghasya* signifying 'of the community of the venerable monks belonging to the Great Monastery of King Dharmapāla at Sōmapura.' The SŌMAPURA-VIHĀRA is already known from a Bodhgayā inscription published in the Annual Report for 1908-09. The name of Sōmapura of the present seals, he thinks, is preserved in the modern Ōmpur, a village situated within a mile to the south of Pāhārpur. Other epigraphs discovered in this circle during the year are the dedicatory inscriptions written on some Buddhist bronze images which were found at Jhewāri in the Chittagong district of Bengal.

BURMA CIRCLE.

Of the several valuable documents found in the Burma Circle, the most important is the bilingual inscription at HMAWZA or old Prome. It is written in Sanskrit as well as Pyu, on the pedestal of a stone image of Buddha and, according to M. Duroiselle, gives us the earliest and longest Sanskrit epigraph yet discovered in that locality. The Sanskrit portion is written in the late Gupta script of about the 7th century A.D. and would show that Sanskrit was the language in which records were written in Prome about the early mediæval period. M. Duroiselle hopes that when properly studied, this inscription will supply much historical information. Several terra-cotta votive tablets with short legends in Sanskrit, Pali, Burmese, Talaing and Pyu were also found in the year. The tablets in Pyu and Talaing give the names of the donors, those which are in Pali extol the qualities of the Buddha, while the Sanskrit ones give the well-known formula which Aśvajit spoke to Sāriputta and which led to the conversion of the two chief disciples of the Buddha. Besides these, M. Duroiselle has made a further collection of the Pyu numerical symbols which are incised on bricks as masons' or brick-makers' marks and mostly resemble the first nine digits used in ancient Indian inscriptions.

SOUTHERN CIRCLE.

In the Southern Circle 434 inscriptions were copied in the year. Of these twelve are written on copper-plates and the rest on stone. The earliest copper-plate examined is dated in the Śaka year 1103 and belongs to the reign of the GAṄGA KING DĒVĒNDRAVARMAN, the object being to record the grant of two villages to Mahāmāṇḍalika Udayāditya, son of śrī-Dharmakhēḍi. The earliest records are the three cavern inscriptions on the Āṛunāṭṭār hill in Pugaḷūr which have been already noticed. Among the Tamiḷ inscriptions in the collection, the one which comes from Kūttanūr mentions an Ōvādakūttar the grandson of the Kavichakravartin of Malari, who might be identified with OṬṬAKKŪTTAR, the well-known poet of the Chōḷa period, though the script does not appear to support the identification. Tiruppālikkuḍi in the Rāmnād district has an interesting inscription dated in the third year of MĀṚAVARMAN SUNDARA-PĀṆḌYA I, whom it mentions as "Sōṇāḍu-vaḷaṅgi aruliya," *i.e.*,

one who gave back Sōṇāḍu (to the Chōḷa king). This, therefore, becomes the earliest known record of this king in which mention is made of the restoration of Sōṇāḍu to the Chōḷa sovereign. Most of the Kanarese inscriptions copied in the districts of South Kanara and Anantapur belong to the VIJAYANAGARA KINGS and supply us with the names of the subordinates of the Tuḷuva and Karṇāṭa kings. Some of them would show that Kundurpi in the Anantapur district was governed by a family of these feudatories during the Vijayanagara period. This is especially borne out by the records of KṚISHṆADĒVARĀYA and SADĀŚIVA found this year. Of the four inscriptions of the Western Chālukya kings which have been secured from the Anantapur district, one which is dated in the Chālukya Vikrama year 33 and the reign of BHUVANAIKAMALLA, mentions Āriya-Paṇḍita, a Śaiva teacher of ŚIVAPURAM, which is one of the eight gates or approaches to Śrīśailam.

WESTERN CIRCLE.

The epigraphical work done in the Western Circle by the members of my office has already been reviewed under "Collection of Kanarese inscriptions in the Bombay Presidency," and need not be recapitulated here. Mr. G. C. Chandra noticed three inscriptions in this year. One of these is reported to be an Arabic record giving the names of the SULTĀNS OF GUJARĀT who were associated with the completion of the town of DOHAD where it was found. Of the remaining two, one is a fragmentary votive inscription written in the Kanarese script of about the 8th century A.D. on the broken pedestal of a stone image, possibly of Sadāśiva, which is now deposited in the Prince of Wales Museum at Bombay. The other is engraved on a stone pillar standing in the compound of a school at BHALEJ in the Kaira district, and is reported to be dated in Samvat 1[3]95 (=1339 A.D.). The carvings on the pillar would show that it is a memorial record.

Indian Museum, Calcutta.

Two SANSKRIT inscriptions were acquired for the Archæological Section of the Indian Museum. One of them is reported to be written in cursive GUPTA characters on the four sides of a stone slab of irregular size from RATNAGIRI in the Cuttack district of Orissa and has not yet been deciphered. The other comes from the PAHARIA mound, DISTRICT BENARES, and is apparently a fragment of no special value.

Peshāwar Museum.

Two KHARŌSHṬHĪ inscriptions were added to the Peshāwar Museum. One of them, a short record of four letters reading *Minaṁdrasa*, is incised on a Gandhāra relief which, though purchased locally, is said to have come from Lālpura in Afghanistan (*vide* Annual Report of the Archæological Survey, 1926-27, Plate XLVIII, *a*). The other is engraved on a copper ladle from District Hazara and was published in 1924 in the *Journal and Proceedings of the Asiatic Society of Bengal*, N. S., Vol. XIX, p. 345 and pl. 14.

Rajputana Museum, Ajmer.

Twelve inscriptions, ranging in date between Samvat 1201 (=1144 A.D.) and 1706 (=1649 A.D.), were copied for the Rājputānā Museum, Ajmer, during the year. The earliest of these inscriptions is engraved on a marble slab in the temple of VIMALASHĀH on Mount Abu. According to it, Vīrama was the son of Lōharaka and grandson of Ninnaka, who was a scion of the Prāgvāṭa clan of the ŚRĪMĀL family, and a courtier of MŪLARĀJA, the founder of the Chaulukya dynasty of Gujarāt. He had two sons named Nēḍha and VIMALA, of whom the latter built the well-known temple on Mount Abu. Some of the names incised on the pedestals of the stone elephants standing in the elephant stable attached to the temple of Vimalashāh, according to Rai Bahadur Gaurishankar Ojha, are identical with those coming in this pedigree and must represent identical personages. Therefore, the riders of the elephants on whose pedestals these names are engraved must be identified with them. Accordingly, the Ninnaka, Lōharaka and Vīrama (Vīraka) of the labels cut on these pedestals must be the three predecessors of Vimalashāh and Nēḍha, his elder brother. It is interesting to observe in this connection that Vimalashāh himself is represented as riding a horse at the entrance of the stables. The next inscription requiring notice is the one which is engraved on a slab in the temple of SUHAVĒŚVARA at Menāl in the UDAIPUR STATE. It is dated in Samvat 1225 (A.D. 1168), and records a donation to the temple of Suhavēśvara which was built by SUHAVADĒVĪ, the queen of the CHAUHĀN KING PṚITHVĪRĀJA II (Pṛithvībhaṭa), who was known as Rūṭhirāṇi in Rājputāna. The stone inscription in an old Śiva temple in the village of ĀṬA in the Korāwār estate of Udaipur is another inscription which may be noticed in passing. It records that when *Mahārājādhirāja* MAHAṆASIṀHADĒVA was ruling at NĀGADRAHA (Nāgdā), the old capital of Mewār, 190 *drammas* were granted to the temple by one Dēddāka. This, Rai Bahadur Gaurishankar Ojha says, is the only known inscription of Mahaṇasiṁha (Mathanasiṁha), the ruler of Mewār. An inscription in the Jaipur Museum which is dated in Samvat 1661 (A.D. 1604), and engraved on the lower portion of a large pillar containing numerous effigies of the Bhaṭṭārakas (Āchāryas) of the SARASVATĪGACHCHHA belonging to the Digambara Jain sect is another record of note. According to it, the pillar was erected by BHAṬṬĀRAKA CHANDRAKĪRTI who was residing at CHAMPĀVATĪ in the reign of AKBAR and his feudatory RĀJĀDHIRĀJA MAHĀRĀJA MĀNASIṀHA. This Champāvatī seems to be the old name of the town of CHĀTSU in the Jaipur State of Rājputāna.

Tours of the Government Epigraphist and Assistant Epigraphists.

In September I attended the Archæological Conference which was held in Simla. In December 1927 and in March 1928, I inspected the office of the Assistant Archæological Superintendent for Epigraphy in Madras and in January 1928 proceeded to Silaharā in the Rewah State to examine the old inscriptions engraved in the rock-cut caves. In the month of March I visited Dhārwār, Bādāmi and Bijāpur in connection with the epigraphical survey of the

Kanarese districts of the Bombay Presidency. The Assistant Superintendent for Epigraphy in my office was sent to Bādāmi in the month of December to secure impressions of the Kanarese inscriptions lying there.

MOSLEM EPIGRAPHY.

By Mr. G. Yazdani.

During the year under report twenty new inscriptions have been found at Bidar and Rauza (Khuldābād), both of which were important towns during the Moslem supremacy of the Deccan. The styles of writing of these records are extremely interesting, ranging from the bold vigorous *Naskh* script of the Tughluq period to the beautiful *Thulth* characters of the Baihmanī time and down to the clear *Nastā'līq* style of Mughal days. The inscriptions are either epitaphs or date tablets referring to the erection of certain buildings. They vary in date from the 8th century of the Hijra to the 11th century of the same era.

One of the inscriptions, discovered at Bidar, is carved on the wall of a natural cavern, wherein tepid water oozes out from the rock. The water contains sulphur and people suffering from rheumatism or diseases resulting from impurity of blood bathe there and are often cured. But the general belief at the place is that the inscription has some miraculous power to cure disease and people while bathing pour water over the tablet and wash themselves from the spray which falls from it.[1]

Another inscription from Bidar which deserves special notice is the one carved on the second gateway of the Fort recording its erection by Aḥmad Shāh Walī Baihmanī, the founder of Bidar, in 1425 A.D. As the architecture of this gateway is very imposing it is interesting to know the exact date of the building through this inscription. Again its style of writing, *Thulth*, is of a very elegant type.

The above-mentioned records are being interpreted and will be published in the *Epigraphia Indo-Moslemica.*

Among the articles now in the press one has been contributed by Maulvi Ashfaq Ali, Gallery Assistant, Delhi Fort Museum. It deals with an inscription of Akbar's reign, recording the date of the erection of a building, apparently the Old 'Idgāh, at Aligarh in 970 H. (1562-63 A.D.). Another article deals with two inscriptions of the Gwalior State and has been contributed by Mr. Ram Singh Saksena.

There is another article in the press dealing with an Arabic inscription from Ahmadābād, which records the building of a mosque by Bā'ī Ḥarīr Sulṭānī in 906 H., during the reign of Sulṭān Maḥmūd Shāh of Gujarāt. The style of writing of this inscription is the *Naskh* of an intricate pattern. This inscription has been deciphered by Mr. C. R. Singhal, Gallery Assistant, Prince of Wales Museum, Bombay.

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[1] At Gulbarga I noticed an inscriptional tablet on which curds and sugar are placed and young children induced to lick them with their tongue in the hope of sharpening their intellect.

SECTION IV.—MUSEUMS.

INDIAN MUSEUM, CALCUTTA.

By Rai Bahadur Ramaprasad Chanda.

Antiquities other than coins added to the Archæological Collection of the Indian Museum in 1927-28 number 289. Among these are 94 neoliths from different parts of NORTH AMERICA received in exchange from the Smithsonian Institution, Washington. Two Indian neoliths dug out of a tank at JAMALPUR in the Monghyr District in Bihar have been presented to the collection by Rai Bahadur Dr. Upendra Nath Brahmachari.[1] In connection with the neoliths may be mentioned a red sandstone object resembling a neolithic celt received by Mr. Brindaban Chandra Bhattacharya of Benares from a *Paṇḍā* at CHITRAKŪṬA in the Banda District in the United Provinces and presented by him to the Director General of Archæology in India who has lent it to the Indian Museum for exhibition. On one side of this object is carved a *Svastika* symbol now somewhat damaged and on the other is engraved in Kushān Brāhmī characters, *Viramūkhasa,* "of Viramūkha." The stone used is too soft to admit of the use of this object as a celt. Sir John Marshall is of opinion that it was an imitation celt, used, perhaps, for ceremonial purposes of some kind, like the late Egyptian, Jewish and other stone knives.

Two groups of sculptures demand special notice. One of these acquired from ORISSA is displayed in Bay No. 12 of the Gupta Gallery. Most of the specimens of this group represent a hitherto unknown and independent early mediæval school of art in Orissa. They will be dealt with by me in detail in a Memoir of the Archæological Survey of India entitled "Exploration in Orissa."

The other group consists of 59 bronze Buddhist images (ranging in height from $16\frac{1}{4}''$ to $2\frac{1}{2}''$) belonging to a collection of 294 images found at NEGAPATAM in the Tanjore District in the Madras Presidency and acquired through the Government of Madras as Treasure Trove. Concerning the provenance of the images M. R. Ry. G. Ramaswamy Ayyangar Avl., B.A., Tahsildar, Negapatam, writes in a letter dated the 2nd July, 1927:—

"The place of the find is a *maidan* or open ground between two trunk metalled roads running north to south, bifurcating a furlong to the north and entering into the heart of the old Dutch fort of Negapatam. The *maidan* is in front of the compound now occupied by Government Offices, where the Jesuit College of Saint Joseph was located till the middle of the 19th century. and which had been the centre of the Buddhist Monastery in times of yore."

[1] "Two Neolithic Stone Implements found in a Tank at Jamalpur (Monghyr)" by Upendra Nath Brahmachari and Shyama Charan Brahmachari.—*Journal and Proceedings, Asiatic Society of Bengal* (New Series), Vol. XXII, 1926, p. 135 and plates.

The circumstances under which the images were recovered are thus described by the Stationary Sub-Magistrate, Negapatam, in a letter dated the 5th January, 1926 (of which a copy has been supplied by the Tahsildar) :—

"This morning when I was in my house at 9 A.M., I got information that some idols have been unearthed from the *maidan* in front of the office. I proceeded to the spot at once. I found the Circle Inspector of Police, Negapatam, with a number of Constables there as well as the village Munsif of Negapatam. On enquiry I learnt that one Arokiaswami was the finder. He says that he came to the *maidan* to remove earth for his domestic use and that when he was digging he noticed something hard like a rusted quarter-anna copper coin, and that he continued the digging and found one idol. On further digging he found some other idols.

"2. The digging operation was continued till 11-30 A.M. Altogether 282 idols were found in a space of three yards square within a depth of about two yards. The idols are all rusted by reason of having remained long under earth. It is not possible to say exactly of what metal they are made. I am sending the idols to you. The receipt thereof may be kindly acknowledged.

"3. Twelve other idols have been recovered by the Velipalayam Police from the house of one man at Velipalayam. These were probably removed before Arokiaswami came to dig earth."

The Jesuit College of Saint Joseph at Negapatam recalls the old temple that Sir Walter Elliot saw there in 1846 and of which he writes as follows :—

"I found it to be a somewhat four-sided tower of three stories, constructed of bricks closely fitted together without cement, the first and second stories divided by corniced mouldings, with an opening for a door or window in the middle of each side. At the top of the lowest storey were marks in the wall, showing where the floor of the second had been fixed. The top was opened. The base of the ground storey was worn at the angles, from collision with passers-by and cattle, but the structure was solid and firm. No trace of sculpture or inscription was visible."[1]

This monument which had for long served as a landmark for vessels approaching the Negapatam roadstead was demolished by the officers of St. Joseph's College in 1867 with the sanction of the Governor-in-Council. Fortunately Sir Walter Elliot caused a sketch of the tower or temple to be made which is reproduced as Fig. 2 in the Plate that illustrates his well-known article entitled "The Edifice formerly known as the Chinese or Jain Pagoda at Negapatam." Some time after the demolition of the temple Lord Napier, Governor of Madras, visited Negapatam when the Jesuits presented him with a bronze image which had been found in making excavations connected with the College.[2] This image is represented in Fig. 3 of Sir Walter Elliot's Plate. It is

[1] *Indian Antiquary*, Vol. VII, p. 224.
[2] *Ibid*, p. 225.

a standing image of Buddha with the right hand raised in the attitude of offering protection and closely resembling the standing images of Buddha in our collection (Pl. XXXVIII, fig. 1). On the pedestal of this image was a votive inscription in Tamil characters of 12th or 13th century according to Burnell. Five Negapatam images of the Indian Museum collection bear votive inscriptions in Tamil characters of the same type. In the copper-plate grant preserved in the Leyden University Museum it is recorded that King Rājarāja I, the father of Rājendrachola I, in the 21st year of his reign (A.D. 1005) granted a village to the Chūḍāmaṇivarmma-vihāra or Chūḍāmaṇipadma-vihāra at Nāgapattana (Negapatam) built by Śrī Māravijayottuṁgavarman, son of Chūḍāmaṇivarman of the Śailendra dynasty, king of Kaṭāha and Śrīvishaya.[1] The *maidan* or field in front of the Government offices at Negapatam whence the bronze Buddhist images were unearthed in January 1926 and where stood the old three-storied temple till 1867 was evidently the site of the Chūḍāmaṇi-padma-vihāra and the demolished temple probably the chapel of the Vihāra. The kingdom of Śrīvijaya (Śrīvishaya) embraced the island of Sumatra in the Indian Archipelago. Storied temples are unknown in Southern India and though the ruins of a few storied temples of the Gupta period still survive in the North, temples with curvilinear *Śikhara* (spire) replaced them there in the post-Gupta period. But from the existing monuments in Java it is evident that storied temples continued to be built in the islands of the Archipelago in the mediæval period.[2] It may therefore be inferred that the old three-storied temple at Negapatam popularly known as the Chinese or Jaina pagoda was the one built by King Māravijayottuṁga-varman of Śrīvijaya (Sumatra) as the chapel of the Buddhist Vihāra of Nāgapattana dedicated to the memory of his father. In the twelfth century A.D. Buddhism must have been in a moribund condition in the Tamil country (Drāviḍa) where it never succeeded in securing royal patronage. The foundation of the Chūḍāmaṇivihāra at Nāgapattana (Negapatam) early in the twelfth century must have given a new lease of life to declining Buddhism of the south and the large number of bronze images so far only accidentally discovered indicates that the faithful flocked to the Vihāra from far and near with votive offerings. Negapatam images acquired for the Indian Museum include Buddha in three attitudes: standing, offering protection (Pl. XXXVIII, fig. 1), seated, touching the earth (Pl. XXXVIII, fig. 3) and seated in meditation (Pl. XXXVIII, fig. 2). The group includes two images of the Bodhisattva Maitreya (Pl. XXXVIII, fig. 4). One seated Buddha image (Pl. XXXVIII, fig. 2) bears marks of gilding and its *ushṇīsha* is set with garnets.

The Indian Museum collection has this year been enriched by the addition of five jewels lent by the Director General of Archæology for exhibition. Two of these are MUGHAL JEWELS probably made for the EMPEROR SHAH JAHAN; an emerald bow-ring carved from a single piece (2·2″ by 1·7″; Pl. XXXVII,

[1] *Archæological Survey of Southern India*, Vol IV, p. 208; Gabriel Ferrand, *L'Empire Sumatranais De Criv-jaya*, Paris, 1922, pp. 46-47; *Epigraphia Indica*, Vol. IX, p. 231.

[2] *A. S. I.*, 1924-25, pp. 25-126.

fig. 14) and an emerald cup also carved from a single piece, mounted in gold set with rubies. The foot of the emerald cup is chased and partly overlaid with translucent gold enamel (diameter of the cup 1·4″; Pl. XXXVII, fig. 11). The emerald bow-ring bears a Persian inscription which is thus translated: "For a bow-ring for the King of Kings, Nadir, Lord of the Conjunction, at the subjugation of India, from the Jewel House (at Delhi) it was selected 1152 (1739 A.D.)." Both these emerald objects NADIR SHAH seized at Delhi with the diamond Koh-i-nur. On the assassination of Nadir Shah in 1747 the jewels fell into the hands of Ahmad Shah Durrani. Maharaja Ranjit Singh obtained the Koh-i-nur and other Mughal jewels from Shah Shuja, grandson of Ahmad Shah Durrani. At the end of the second Sikh war when the Punjab was annexed in 1849, the Koh-i-nur and these two jewels were found in the royal treasury of Lahore. The Koh-i-nur was sent to England and is now among the regalia. Lord Dalhousie purchased the emerald bow-ring and the cup. The Government of India purchased these jewels from Colonel W. H. Broun, son-in-law of Lord Dalhousie, in 1921.

The three other jewels lent by the Director General of Archæology are:—

(1) Carved Sapphire figure of seated Rāma with Sītā seated on his left knee, Lakshmaṇa standing to the right holding *Chowri* in his left hand, and Hanumān and another monkey crouching at the feet, mounted in a gold enamelled frame ($1\frac{1}{2}''$ by $1''$; Pl. XXXVII, fig. 12). The squarish face of the figures indicates that this jewel was carved in Upper India in the 15th-16th century.

(2) Carved Spinel figure of Vishṇu standing with his right foot resting on the back of Garuḍa, mounted on ruby ($1''$ by $\frac{1}{2}''$), of the same age and style as No. 1.

(3) Carved pink Topaz with standing figure of Rāma with bow and arrow, mounted on gold base and gold enamelled back piece (1·9″ by 1″; Pl. XXXVII, fig. 13). The long face of the figure and the manner in which the hands are joined indicate that it was manufactured in Southern India in the 17th-18th century.

A Persian inscription discovered at Dacca has been acquired through the kindness of Hakim Habibar Rahman of Dacca. The record is thus read by Maulavi Shamsuddin Ahmad, M.A., Assistant Curator, Archæological Section, Indian Museum:—

بدور محمد شه داد گر دکاکین چوک جهانگیر نگر
بنا کرد مرشد قلیخان و گفت بماناد از ما درین چوک اثر

"In the reign of MUHAMMAD SHAH the Just, MURSHID QULI KHAN built the shops of the Chawk at Jahangirnagar (Dacca) and said, 'Let a memorial of us remain in the Chawk 1141 (=A.D. 1728).'"

This Murshid Quli Khan,[1] the Deputy Governor of Dacca, was the son-in-law of Shuja Khan, the Nawab Nazim of Bengal (A.D. 1726-1739), and should

[1] Abdus Salam's English translation of *Riyazu-s-salatin*, p. 298.

not be confounded with the great Murshid Quli Khan or Jafar Khan, the Nawab Nazim of Bengal before Shuja Khan.

Eighty-four non-Muhammadan and 193 Muhammadan coins have been added to the cabinet during the year. Three among the non-Muhammadan coins deserve special notice :—

(1) Gold double daric (Pl. XXXVII, fig. 10).[1]

Obverse. Persian king, bearded, in kneeling-running attitude r.; wears kidaris with four points and girdled Kandys; holds in right hand strung bow and in left spear over shoulder; in field left downwards ΣΣΤΑ; below ΜΝΑ on r. Φ.

Reverse. Design with horns and rounded enclosures containing irregular markings.

Hammered edge.[2]

(2) Decadrachm generally recognised as commemorating Alexander's expedition to the Punjab (Pl. XXXVII, fig. 9).[3]

Obverse. Alexander the Great on horseback, attacking with his lance a person riding on an elephant; the driver of the elephant turns to throw (a javelin) at the attacker.

Reverse. Alexander the Great as a god; he wears cloak, is girt with sword, holds in his right hand a thunderbolt, and rests with his left on a spear. Below a monogram of B A B.

The weight of this specimen is 41·21 grammes. There are now two other Decadrachms of this type in the British Museum.[4] The Indian Museum specimen closely resembles the older one in the British Museum, but is much worn.

(3) A gold stater of Euthydemus I of Bactria (Pl. XXXVII, fig. 8).[5]

TAXILA MUSEUM.

During the year under review the building of the new museum at Taxila —or rather of that part of it which was required for immediate use—was brought to completion and the museum was formally taken over by the Archæological Department in March 1928. The creation of this museum is due to Sir John Marshall, who besides being responsible for the inception of the scheme and for formulating the plans of the building, has himself watched over every phase of the undertaking. The design is the work of Mr. B. M. Sullivan, O.B.E., Consulting Architect of the Punjab Government and bears eloquent testimony to his good taste and skill. When eventually completed in its entirety, the museum will consist of a square central court. open to the sky, with exhibition halls and offices on three sides and an Ionic colonnade, allowing a fine prospect of the Murree Hills, on the fourth. For the present,

[1] Purchased from Ram Das of Rawalpindi.

[2] G. F. Hill, *Catalogue of Greek Coins of Arabia, Mesopotamia and Persia*, London 1922, pp. cxliv and 179. Plate XX, 11-13.

[3] Purchased from Agya Ram of Rawalpindi.

[4] *British Museum Journal*, 1926, No. 2, pp. 36-37, Plate xviib.

[5] Purchased from Ram Dhon Govinda Ram of Rawalpindi.

however, only so much of the hall has been built as is necessary to house the collections already recovered from the soil of Taxila, namely, the central and two long galleries on the western side, the former measuring 80 ft. by 28 ft., the latter 72 ft. by 24 ft., together with a coin and jewellery room, an office, lavatory and an entrance porch on either side of the central hall. When the rest of the building will be finished, cannot at present be foreseen. It may not be for another ten or even twenty years as it will depend on the rate at which antiquities are recovered from the excavations; but meanwhile everything has been done to make the surroundings of the museum as attractive as possible by putting down lawns, shrubberies and flower beds to correspond with the main features of the lay-out, and to hide as far as may be the present abrupt terminations of the structure.

Seen from the outside (Pl. XXXIX, *a*) the battering walls of dark grey limestone, broken only by the portico and clerestory windows beneath the overhanging roof, give the museum an almost fortress-like appearance, but it is none the less pleasing because of this severity. The interior (Pl. XXXIX, *b-c*) is characterised by a same simple dignity—well suited to set off the collections displayed. Its most noticeable features are the almost continuous line of windows, 38 in number, which admit ample light for the show-cases along the sides and in the centre of the galleries, the fine massive ceiling of plain deodar timber, and two screens of partly polished deodar wood in the Indo-Corinthian style, which separate the side galleries from the central hall. The walls, let it be added, are finished off in cement and painted, so that they can be cleaned down without difficulty.

Besides being admirably designed, the museum has been exceptionally well built, and for this the fullest credit is due to the various Public Works officers who have been in charge of the work, and particularly to Colonel A. S. Holme, R.E., Superintending Engineer, Rawalpindi Division, and to Messrs. S. G. Stubbs, O.B.E., and E. S. Heard, Executive Engineers, without whose assiduous watchfulness the success that has attended this undertaking would never have been possible.

Another officer who also deserves the gratitude of Government is Mr. Lionel Heath, Principal of the Mayo School of Art at Lahore, who generously consented to supervise the construction and carving of the teak-wood screens. How well he succeeded in doing so is evidenced in the finished work, but the difficulties he experienced may be judged from the fact that the carving of the capitals had to be done three times over, and that, even when all the woodwork had finally been approved, backings of half decayed kail wood were substituted for deodar ones by the contracting firm and were not detected until most of the wood-work was in position.

Although the museum was not actually handed over to the Archæological Department until March, 1928, Sir John Marshall had already been pushing on with the furnishing of the building and the arrangement of antiquities, and before the 1st of April not only were all the new show-cases in position and every object transferred from the old store-rooms, but many of the finest

groups of stucco, clay and terracotta sculptures had been carefully stripped from the walls of stūpas and monasteries and set up again in the galleries of the museum, where they will henceforth be safe from harm. Among these groups is the fine series of 35 Buddhas and Bodhisattvas from the south face of the Main Stūpa at Mohra Moradu—the whole extending over a length of nearly 40 ft. Some figures of this series are illustrated in Pl. XXXIX, *d*, and will serve to give an idea of the plastic beauty of the originals which deserve to rank among the foremost examples of the late Graeco-Indian School. Even in the best period of this school it would be difficult to name any reliefs in which movement has been expressed with such truth and sense for the decorative as it is in the draperies of some of the attendant Bodhisattvas. Another striking group now set up in the museum comes from the monastery courtyard at Jaulian and is illustrated in Sir John Marshall's "Guide to Taxila", Pl. XXVIII. It is of exceptional value in that it is modelled not, like most of these reliefs, out of lime plaster, but out of clay which, as a plastic medium, is far superior to plaster. In the flourishing days of Taxila clay was undoubtedly used for sculptures and decorations far more widely than any other material, but it is only in the rare instances when it has been converted by some accidental fire into terracotta that it has survived. Yet a third group that deserves mention is the fine Buddha with attendants figured in the same *Guide,* Pl. XXVII, which was also found in a small chapel at Jaulian and is not only the best preserved of any stucco sculptures yet unearthed in the northwest of India, but perhaps the finest example of that particular phase of art when the Graeco-Indian was passing into the Gupta style.

The removal of these and other reliefs from the stone walls to which they were attached and their installation in the museum was an operation requiring most delicate handling. That it was successfully accomplished is due to the skilful work of Mr. M. N. D. Gupta, the Curator of the Taxila Museum, and of the two modellers temporarily associated with him from the Offices of the Superintendent, Archæological Survey, Frontier Circle, and of the Archæological Section, Indian Museum. Needless to say, before the work was begun detailed sketches and drawings were made of each of the groups, and frames of expanded aluminium were prepared to receive them. In some cases it was found possible to dismantle, stone by stone, the walls to which they were affixed and thus to remove the reliefs in larger sections than would otherwise have been possible. In other cases there was no alternative but to remove the figures piece-meal after sawing them away from the wall, after which they were cleansed of the salts with which they were impregnated and floated with plaster of Paris on to the aluminium frames, and so assembled again in their new environment.

As to the rest of the collections, they have been exhibited as follows in the New Museum:—in the Central Hall, the Gandhāra sculptures and metal utensils, arms and other objects arranged in chronological sequence; in the North Gallery, the relic-caskets, stucco and terracotta reliefs from various parts of the site; in the South Gallery, the pottery, terracottas and miscellaneous

objects; and in the strong room, the gold and silver jewellery, silver utensils precious gems and seals and coins. The coin collection now numbers over 9,278, made up as follows:—Local Taxilan, 1,886; Indo-Greek, 398; Scytho-Parthian, 3,495; Kushān, 3,047; miscellaneous, 452.

The expenditure incurred during the year on completing the fabric of the museum amounted to Rs. 16,480 and on show-cases and other furniture to Rs. 17,702-8-0.

DELHI FORT MUSEUM.

By Mr. B. L. Dhama.

The museum is gradually becoming more and more important in view of the increasing number of its exhibits and the improved and attractive manner in which they are displayed. During the year under review nineteen exhibits of general interest or historical value and 236 Muhammadan coins were received of which 29 were of gold, 178 of silver and 29 of copper. A new square show case of appropriate design has been fixed round one of the piers in the main hall and a silk embroidered prayer carpet 16′ 9″×5′ 6″ has been exhibited therein. Two twelve-sided stands have also been provided to accommodate *farmans*, photographs and paintings. As funds become available more square show-cases will be arranged around the other piers and exhibits at present lying undisplayed will find a place in them.

PESHAWAR MUSEUM.

By M. Dilawar Khan.

The number of visitors during the year was 95,904 which is the highest on record since the establishment of the Museum in 1910-11. The Museum though limited in scope now ranks as one of the best of its kind in India and has been recognized on all hands as thoroughly up-to-date. Sixty-seven photographic prints of antiquities were sold, sixty to the European and American visitors and the remaining seven to Indians. In addition, eight special photographs of objects in the Museum were issued to Sir Herbert Baker, A.R.A. of London, in compliance with his request made during his visit to the Museum in February 1927.

The acquisitions during the year numbered sixty-nine, thirty-seven being coins and the rest other antiquities. Of the coins, one silver Mughal coin was acquired on loan from the Director General of Archæology in India through the Superintendent, Archæological Survey, Muhammadan and British Monuments, Northern Circle, and one gold Kushano-Sassanian coin was purchased locally. The remaining coins were received as presentations, *viz.*, two silver and nine copper Mughal coins from the Punjab Government through the Superintendent, Archæological Survey, Muhammadan and British Monuments, Northern Circle, twelve silver Mughal coins from the Government of Bihar and Orissa through the Secretary, Coin Committee, Patna, one copper coin of *Kanishka*

and ten copper cast coins of the kings of Kaliṅga (Puri and Ganjam) from the Maharaja of Mayurbhanj through the Superintendent, Archæological Section, Indian Museum, Calcutta; and one silver coin of the Emperor Aurangzeb from the Director of Industries, Central Provinces.

Of the antiquities, a panel depicting the Birth of the Buddha, a stone lamp, a miniature earthen vase, a Corinthian capital, an inscribed relief of two wrestling figures, three Buddha and Bodhisattva images discovered in LAHORE VILLAGE 17 in the Peshawar District, a stone head of Pāñchika, a panel depicting the "Subjugation of the Elephant" and "The Visit of Indra", and an elephant carved in stone, were purchased locally, while seven antiquities consisting of Buddha and Bodhisattva heads and images, a panel of low reliefs, a stone elephant, a headless image of Hārītī, received from various sources, which had been lying unexhibited in the Museum for a long time, have now been brought on the registers and duly numbered. The rest of the antiquities were received as presents, namely, two Buddha and Bodhisattva images, a slab of the "Offering of Four Bowls to the Buddha" and four fragmentary reliefs from Miss Bremsen, of Mardan, a well preserved image of Buddha with part of a copper necklace, found at village TOR-DHER in the Peshawar District, from Khan Fateh Muhammad Khan of Mardan, and (*a*) four stucco heads and (*b*) an inscribed copper ladle and an earthen water vessel, unearthed at village BEDADI in the Hazara District, from Lt. I. W. C. Martin, R.E. and Mr. T. B. Copeland, C.I.E., I.C.S., Revenue Commissioner, North-West Frontier Province, respectively.

Thirty-one new publications were received in the Museum, sixteen being purchases and fifteen, presentations.

The revised *Handbook to the Sculptures in the Peshawar Museum* is almost complete and was expected to be ready for the press in October last. Unexpected pressure of work before his departure on leave rendered it impossible for Mr. H. Hargreaves, the then Honorary Curator, to complete it. A few minor details have yet to be added and the said officer has promised to publish the book on his return from leave in October next, though he has now been relieved of the additional charge of the Honorary Curatorship.

Annual repairs and whitewashing of the Museum building were carried out, as usual. The most unpleasant yellow wash given to the interior of the building, referred to in the last year's report, has now been changed into a more pleasing pale buff colour.

The electric pump is working well and the condition of the lawns and hedges is excellent. Underground piping has been provided for the irrigation of the lawns and consequently no digging of the channel across the road, referred to in the last year's report, is now required. The area outside the lawns has been planted with more shrubs and hedges. The grounds have not yet settled and large patches in the lawns sink when watered, necessitating continual refilling and regrassing. A sudden depression recently occurred in one of the lawns undermining an adjacent godown resulting in a split in one of the walls. The Secretary to the Chief Commissioner in the Public Works De-

partment has now administratively approved the estimate for fencing the grounds of the Museum and providing iron gates at the entrances. It is not known, however, whether funds will be provided for the work in the near future. The Museum was closed to the public for 22 days, in addition to Sundays, the Hall being required, as in the previous years, for conferences, meetings, departmental examinations and social functions. The conduct of visitors has been exemplary and no damage or loss was done either to the cases or the antiquities. The Government of India decided (Education, Health and Lands, Res. No. 800, dated 9th April 1927) that Archæological Superintendents should not undertake administrative responsibility in connection with Provincial Museums. The Superintendent, Archæological Survey, Frontier Circle, however, being occupied in the preparation of the *Handbook to the Sculptures in the Peshawar Museum* was permitted under special sanction to hold honorary charge of the Museum until 24th November 1927. From 25th November the *post of a paid Curator on Rs. 150—10—250 per mensem was sanctioned by* the Government of India and I was appointed thereto in lieu of my post of Custodian which was abolished from the same date.

Two new Kharoshṭhī inscriptions, one on a Gandhāra relief and the other on a copper ladle, were acquired during the year. The relief was purchased locally on 28th May 1927. It was stated to have been obtained from a Hindu at village LALPURA in Afghanistan. It measures $15\frac{1}{4}'' \times 10\frac{1}{4}'' \times 2\frac{1}{2}''$. The inscription which records the name *Minaṁdra, i.e.*, probably Greek 'Menander' has been noticed by Mr. Hargreaves in the *Annual Report of the Archæological Survey*, 1926-27, p. 230.

The inscribed copper ladle was received on 18th October 1927 from Mr. T. B. Copeland, C.I.E., I.C.S., Revenue Commissioner, North-West Frontier Province. It had been sold to him some years back by a local villager who professed to have found it at the ruins of a Buddhist Monastery at village BEDADI near Shinkiari, Tehsil Mansehra, in the Hazara District of the North-West Frontier Province. Mr. N. G. Majumdar published the inscription in the *Journal and Proceedings of the Asiatic Society of Bengal*, New Series, Vol. XIX, No. 8, p. 345, Pl. 14, in September 1924 and also noticed it in his *List of Kharoshṭhī Inscriptions*, 1925, p. 3, No. 2. The inscription, which is Buddhist in origin, records a gift to the Kāśyapīya *Āchāryas* of the kingdom of Uraśā, modern Hazara.

Estampages of a bilingual Muhammadan inscription, found in the TOCHI VALLEY (No. 11) in Kufic and Śāradā, dated 243 A.H., were sent for examination, in February 1927, to Mr. Muhammad Hamid Kuraishi, B.A.

SARNATH MUSEUM.

By Mr. M. S. Vats.

The Superintendent, Hindu and Buddhist Monuments, Northern Circle, continued to remain ex-officio Curator of the Archæological Museum at SARNATH.

which maintained its usual popularity. Among distinguished visitors were Sir Laming Worthington Evans, Secretary of State for War, His Highness the Maharaja of Travancore, Messrs. Kuroita and Godh of the Imperial University and Museum, Tokyo, and Dr. and Mrs. Lüders.

Surplus antiquities were arranged in the new godown constructed last year. Sir John Marshall on the occasion of his visit to the Museum directed the carrying out of several improvements, the most important of which is the thorough overhauling of exhibits with a view to arrange them in a more chronological and systematic manner.

The Museum staff performed their duties satisfactorily. Owing to ill health the Custodian was granted three months' medical leave, and Babu Kidar Nath, 2nd Clerk in the office of the Superintendent, Hindu and Buddhist Monuments, officiated for him. The appointment of a sweeper has removed a long felt want.

NALANDA MUSEUM.

By Mr. J. A. Page.

(*a*) *New Acquisitions.* The only "Museum" maintained in the Central Circle is the little collection of minor antiquities recovered during the course of excavation on the NALANDA site, which is kept temporarily in the Archæological Department Rest House there. The collection has been described in previous reports, but below are described some of the more interesting of the finds made during the year:—

Two inscribed copper plates found in the north verandah of Monastery Site No. 1 at the Devapāla level, among the burnt debris. These have been despatched to the Archæological Chemist for cleaning preparatory to their decipherment by the Government Epigraphist.[1]

A number of bronze images, all, except one, from Monastery Site No. 1, and again from the Devapāla level. They were all found among vitrified debris, fragments of which still adhere to them, and except for some seven relatively well preserved images they are all defaced by fire in greater or less degree. These seven images comprise three of Buddha, one of Maitreya, one of Avalokiteśvara, one of Vishṇu, and one of Vajrapāṇi. One of the Bud-

[1] These copper-plates, as cleaned, were despatched to the Government Epigraphist after the close of the financial year here under review; and he states that one of them contains an obviously spurious inscription purporting to emanate from the great Gupta king, Samudragupta (c. 330-80 A.D.), and the other is a genuine charter of Dharmapāladeva, the 2nd king of the Pāla Dynasty, who reigned through the last quarter of the 8th century and the first quarter of the ninth. This charter grants some villages in the Gayā District of the Nagara Division, presumably for the upkeep of the monastery in which it was found; and it is interesting to note that this copper plate was recovered from the ruins of the same monastery and at the same level as the similar grant of Devapāladeva found in 1919-20. The inference is therefore that the monastery stratum we have all along known as the Devapāla monastery must now be ascribed to the preceding king, Dharmapāladeva, and that this monastery survived till at least well into the reign of Devapāladeva (whose copper-plate grant was issued in the 39th year of his rdign) and was destroyed by fire at some subsequent date, which cannot yet be ascertained.

dha images is complete with halo and is shown seated in *bhūmi-sparśa-mudrā*; it is six inches high and very well wrought; the usual umbrella that shelters the Buddha was not included in this representation. The second Buddha image, 5½ inches high and in the same *mudrā*, lacks its original halo but is otherwise complete. The third Buddha figure forms the centre of a group of three and is shown in *dharmachakra-mudrā* and seated in "European fashion," with his feet resting on a lotus; smaller male and female flanking figures are seated in *vilāsa-mudrā*. The group is complete with halo and festooned umbrella, and measures six inches high. The Maitreya and the Avalokiteśvara images are shown as two-armed, and both have the right hand held in *vara-mudrā*, the left grasping the usual lotus stalk. The former image is distinguished by a diminutive stūpa in the head-dress. They are 8 inches and 4¼ inches in height and are only slightly burnt. Both are complete except that the umbrella is missing from the Avalokiteśvara. The image of Vishṇu represents him standing and with four arms, the hands holding the *chakra*, *śaṅkha*, *gadā*, and *padma*; a chain of flowers falls from his ornamental crown to below his knees, and he wears girdle, bracelets, and necklace; a devotee kneels in adoration on the pedestal, and the image, which is complete with halo, stands 7½ inches high. Vajrapāṇi is shown seated with one leg crossed before the other on a wide lotus flower; a large *vajra* is held in his left hand and a fly-whisk in his right, the tail hanging over his shoulder; he wears crown, ear-rings, necklace and bracelets. The image measures six inches in height and is complete with halo.

An interesting find from Monastery Site No. 6, and the only bronze antiquity found there this year, was the hand of a large bronze image. This measures six inches from wrist to finger tip and is excellently wrought.

Of images in stone there is a four-armed Avalokiteśvara wearing crown, necklace, bracelets, and sacred thread, and seated in *vilāsa-mudrā* on a lotus throne. Three of the hands hold a rosary, a lotus stalk, and an unidentified object, and the fourth is extended in *vara-mudrā*. The image is inscribed at the back[1] and is 4¼ inches high. It is very well carved and appears to belong to the Devapāla period.

Another little image in stone, and excellently wrought, is a Kuvera 3¾ inches high, from Monastery Site No. 1. He is equipped with crown and ornaments and sacred thread, and over-turned vases of wealth appear on the background on each side of his head and again on the pedestal.

An interesting object is a little inscribed votive stupa of polished stone, complete with a surmounting umbrella of ten discs, and standing 5½ inches high.

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[1] Estampages of all inscriptions found during the year have been prepared where possible and sent to the Government Epigraphist for decipherment.

Two other Hindu images were found in Monastery Site No. 1, again at the Devapāla level. These are Sivaite images and each represents a standing female figure with four arms and flanked at the foot with a lion and a bull. With both images one hand is extended in *varada-mudrā* and another held aloft, a trident, and balancing this trident on the opposite side is a *liṅga-in-yoni*, in one case supported by the right hand of the image, and in the other appearing detached on the background, out of which the hand of an invisible being protrudes grasping the upheld hand of the female figure. Presumably this hand is intended to be that of Śiva, whose emblem appears just above it. These two little images stand 3¼ inches and 3 inches high respectively, and except for minor differences in detail are identical.

Another little Sivaite image from the same site and the same level is a little Gaṇeśa in *vilāsa-mudrā* with his right foot resting on a rat. He is shown four-armed, holding a little axe in one of the hands and a lotus flower (?) in another; the image is 3¼ inches high.

The finding of these Hindu images along with Buddhist images on this essentially Buddhist site affords yet further evidence of the influence exerted by Hinduism on Buddhism in the 9th century A.D.—in the reign of a king so zealous and militant a Buddhist as Devapāla [1] and in a monastery that held his own copper-plate grant of endowment.[2]

Among the miscellaneous articles recovered were a number of pieces of chain armour and a spear head 6¼ inches long, all badly burnt and found in the vitrified débris of the Devapāla structure in Monastery Site No. 1. Similar fragments have been found in previous years, but how all this armour came to be in this Monastery we have no means of knowing. It is perhaps not over-stressing the probabilities to associate its presence with the great conflagration that consumed the monastery—a disaster that seems to have been too sudden and overwhelming to have been merely accidental.

A broken part of a silver signet finger-ring, with indecipherable seal, was also found in Site No. 1 at the Devapāla level, as well as a leaf-shaped gold ornament decorated in repoussé with floral designs and measuring two inches long.

More prosaic finds are represented by three padlocks, two of them of square shape and complete with key, and the third cylindrical, which again were recovered from Monastery Site No. 1, where they were used for the cell doors; and by a potter's square stone slab for rounding the bottoms of *ghaṛās*; the latter measures 13 inches square and is dished in a circular hollow in the middle.

An important epigraphical find was three inscribed seals (Reg. Nos. 687, 819 and 851-854-859), two being of Sarvavarman Maukhari, and the third, broken in three pieces, of Śrī-Harsha. These have been identified by Dr. H. Sastri, Government Epigraphist for India.

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[1] Smith's *Early History of India*, 4th Edition, p. 414.
[2] *Epigraphia Indica*, Vol. XVII, p. 310 *et seq*.

MUSEUMS IN BURMA.

By Mons. Charles Duroiselle.

As has already been noticed elsewhere in this report there has recently been added a small museum to the list of those in Burma maintained from Central Revenues. It has been located at MYOHAUNG in Akyab District for the collection of antiquities found in Arakan.

A small table with glass top, oval in shape, and a Saxony plate were acquired by purchase for deposit in the Museum on the Palace platform, MANDALAY. They belonged to THIBAW (1878-1885), the last of the Burmese kings, and are now after some vicissitudes being returned to his Palace, their original home, for the said Museum is accommodated in one of the Palace apartments.

Some hundreds of antiquities, all Buddhist, consisting principally of terra-cotta votive tablets, stone and bronze images of Buddha, and other minor antiquities were excavated at Pagan and Hmawza during the year under report. Of these some have been deposited temporarily in their respective museums at PAGAN and HMAWZA, others having been brought away to the office of the Superintendent at Mandalay for examination and study. The most important of them have been briefly described already above under the head Exploration.

SECTION V:

OFFICERS ON SPECIAL DUTY.

Sir Aurel Stein.

After his return towards the close of April from the tour of archæological exploration carried out in Waziristan and North Baluchistan Sir Aurel Stein was kept fully occupied until August by the preparation of a detailed record of the observations made on this tour and of the results of the excavations which had attended it. This extensive record was intended for publication among the *Memoirs* of the Archæological Survey and submitted to the Director General of Archæology early in September along with the numerous antiques selected for reproduction in twenty-one plates. The photographing of the selected specimens of painted pottery, etc., was satisfactorily effected at the Simla office under the superintendence of Mr. Q. M. Moneer. Supplementary tasks connected with the publication of *Innermost Asia,* including the preparation of a full introduction, the compilation of maps illustrating the ancient sites of Sīstān, and the revision of detailed Indices extending over more than 200 quarto columns were disposed of by the close of October. By that time, too, Sir Aurel had succeeded by full use of his leisure hours in preparing for print the personal narrative of his explorations of 1926 in Upper Swāt for the publication of which the Government of India were pleased to accord their permission. It has been published by Messrs. Macmillan and Co., London, in May, 1929, under the title " On Alexander's Track to the Indus ".

Early November saw Sir Aurel at Delhi where at the invitation of the United Service Institution of India he delivered a lecture on " *Innermost Asia: its Geography as a factor in History* ". This set forth in broad outlines the results which the geographical and antiquarian observations gathered by him in the course of his three Central-Asian expeditions had yielded concerning the rôle played by the Tārīm basin and north-western Kansu as the channel for the exchange of far-reaching cultural influences between India, the Hellenistic Near East and China. It also discussed the geographical basis of the great historical movements of which that great drainageless belt of Asia was the scene during the last two thousand years. This lecture, subsequently repeated at the Staff College, Quetta, has since been published in the *Journal* of the United Service Institution of India.

After having been kept busy at Quetta with practical preparations Sir Aurel Stein started at the close of November for the long tour of archæological exploration through Khārān, British Makrān and Jhalāwān which had been planned by him since 1925 in consultation with Sir John Marshall. These extensive territories once included in the province of Gedrosia of the ancient Persian empire and now forming part of the Kalāt State in Southern Baluchistan are at present for the most part arid wastes. They are likely to have been

that all through historical times; for the classical records, especially those relating to the trials experienced by Alexander's army on his return from the conquests on the North-West Frontier and the Indus, clearly show that at that period the physical character, mainly desertic, of this great region could not have differed very much from the present one.

All the same an archæological survey of it appeared very desirable. Almost the whole of the area had remained so far unexplored in an antiquarian sense. But the systematic and fruitful excavations carried out by Mr. Hargreaves in 1925 at the chalcolithic site of Nāl and the brief account which Major E. Mockler, at one time Assistant Political Agent at Gwādar, had published in 1877 of the observations and finds made by him at two or three localities near the coast of Makrān, proved that remains of prehistoric settlements were to be looked for there. All the more interest was bound to attach to a systematic search for such sites and to such a preliminary examination of their remains as the time available on a reconnaissance survey extending over so great an area would permit, because the discoveries made at Mohenjo-daro and Harappa had proved the existence in chalcolithic times of a highly developed civilization in the Indus Valley and thus immediately to the east of these Kalāt territories. Since a direct connexion of the 'Indus civilization' with the early Sumerian one in Mesopotamia had been suggested it became doubly important to examine whatever prehistoric remains could be traced in the great belt of country which extends from the terminal course of the Indus towards the Persian Gulf, or at least in that portion of it which lies within the Indian border. In addition there was a special attraction in the hope that the ancient remains surveyed there, whether prehistoric or other, when compared with present-day conditions of life and settlements in this wide area might help to throw light on the much-discussed problem of 'desiccation', interesting both to the geographer and historical student.

Some idea as to the nature of the task may be conveyed by the fact that the explorations undertaken in the interest of this survey had to be carried out over an area extending close on 300 miles from east to west and over 270 miles from north to south. Apart from the great extent of the region to be visited there had to be reckoned with the desert character of the ground, waterless for the most part, trying climatic conditions, absence of local resources and limitations of time and labour. All these combined to render work distinctly difficult in this remote and, in its physical aspects, far from attractive region. It would have been quite impossible to meet these difficulties and successfully to accomplish the task within four and a half months but for the most willing and effective help of the authorities of the Kalāt State. This was secured from the outset through the arrangements which Colonel T. H. Keyes, C.M.G., C.I.E., Political Agent, Kalāt, and Nawāb Sir Mir Shams Shah, K.C.I.E., I.S.O., Wazir-i-Azam of Kalāt, were kind enough to make. For the planning of the tour the shrewd advice of the former distinguished officer commanding exceptional local knowledge, proved of the greatest advantage.

Notwithstanding all this assistance the reconnaissance survey of sites scattered over so vast an area, from the drainageless basins of Khārān to the coast of the Arabian Sea and from the Persian border to the southernmost tributaries of the Indus, would have called for several cold weather tours had not the fair-weather roads, opened in recent years mainly under the ægis of Colonel T. H. Keyes, afforded the facilities of motor transport along certain chief lines of communication. These enabled Sir Aurel to move rapidly along the great lateral valleys of Makrān and the central ones of Jhalāwān to wherever ancient sites could be traced in them, and thus to save time for the long weary marches which had to be done with camels through desert hills or barren plains in order to reach ground of archæological interest away from those valleys. By dint of much hard travel in the course of which 426 miles were covered with motor lorries and not less than 955 miles by marching, it became possible to survey a total of 65 sites, all with a few exceptions dating from prehistoric periods. Thus, too, time was secured for trial excavations at those sites, fifteen in all, where features of special archæological interest made it particularly important to secure adequate data for the determination of the general character and relative epoch of the remains, and where local conditions permitted of the collection of needful labour and the supply of drinkable water.

A detailed report on the results of the surveys and excavations made on this tour was prepared within four and a half months from its conclusion. Together with thirty-three plates of selected antiquities arranged for reproduction and detailed plans of sixteen sites it was ready by September, 1928, for publication by the Archæological Department. The hope of this being achieved at an early date permits the present contribution written since the completion of this report to be restricted to brief notes on the tracts where ancient remains were traced and surveyed, and on those essential observations and finds which rendered it possible to determine their general character.

In the report above mentioned it has been Sir Aurel Stein's endeavour fully to record what he could observe and note at each site and by description and illustrations adequately to represent the general character of the archæological materials secured there. But the systematic classification of these abundant materials bearing on different stages of prehistoric civilization must await on the one hand expert examination of the varied ceramic materials in respect of their technique and fabric as distinguished from their decorative design, and on the other close comparison of the same with corresponding relics from other archæological fields widely spread over Asia. It is much to be hoped that these tasks will attract the attention of competent scholars combining with special technical experience also a close familiarity with the results achieved outside India by prehistoric researches. In the same way it will need prolonged systematic excavations, such as may at some of the sites take months if not years, before the conclusions derived on this reconnaissance from stratigraphic indications, surface finds, burial remains, etc., can be duly co-ordinated and verified. These are tasks which must be left to others in the future.

Sir Aurel Stein's work in the field was commenced in the first week of December along the high valley of SURĀB to the south of Kalāt, the capital of the State. There a number of mounds proved by their pottery remains to have been formed by the accumulation of débris from habitations during late prehistoric times. Only at two of the sites near Surāb which are still reached by water from springs or *Kārēzes*, could glazed and other ceramic ware be found pointing to occupation during the historical period. From there four marches led across the rugged Gar Range which divides Jhalāwān from Khārān to the north-eastern end of this territory. Starting from Naurōz-kalāt, the first inhabited locality met, the site of Tōji was surveyed. It had first attracted Sir Aurel's attention in 1904 when on a rapid tour from the side of Nushki he had endeavoured to trace certain ruins vaguely mentioned by Pottinger on his pioneer journey of 1810 from Nushki to Sīstān. The remains of Tōji comprise a mound which on closer examination proved by the evidence of its painted pottery and some stone implements to date from approximately the same early chalcolithic period as the mounds of Zhōb and Lōralai explored in 1927 in Northern Balūchistān. Rapid excavation brought to light remains of massive walls solidly built with undressed stones. Ancient embankments constructed with large blocks of stone, such as are known everywhere in this region as *Gabr-bands* and thus vaguely ascribed by tradition to Zoroastrian times, were found in the neighbouring dry flood bed of the Bado. They had clearly served irrigation purposes and probably went back to the same early period as the mound. The subsequent march from Naurōz-kalāt down the course of the Bado proved that the ruined enclosures 'with curious open freestone work' which Pottinger had seen and which had greatly puzzled him, were those of early Muhammadan tombs near the Ziārat of Bībī Āzād Gaz. Similar ruined structures were passed also further down the valley before reaching the modest village which serves as the capital of Khārān and the residence of its chief.

The territory of KHĀRĀN comprises some 18,000 square miles but now counts a population of only two people per square mile and that mostly nomadic. That it must have had far greater economic resources within historical times, with a correspondingly larger settled population, was clearly demonstrated by the examination of the *damb* or mound situated two miles to the SSE. of Khārān-kalāt and known as PĪR HASSAN SHĀH after a saint's tomb on its top. It proved to be of considerable size, measuring some six hundred yards in length. By the evidence of plentiful decorated pottery débris it marks a site occupied from prehistoric down to early historical times. None of the glazed ware distinctive of the Muhammadan period could be found, an indication that abandonment took place before the Islamic conquest. The deltaic area which the Bado and other flood beds form here, before such water as they carry on rare occasions loses itself in the great drifts and desert further to the south-west, has apparently since early times held the only agricultural settlement of any size in Khārān.

As no information about other mounds within the territory was obtained the journey was resumed on December 15th to the south. It led up the

valley of GARUK, containing no cultivable ground until on the fourth march the tract of Besēma at its head was reached. Here cultivation wholly dependent on the very precarious rainfall of this region is carried on in favourable years by a few hundreds of semi-nomadic people. That the conditions must have been very different in prehistoric times is proved by half a dozen mounds surveyed in this wide valley trough, among which the TAGHAZĪ-DAMB attains a height of some forty feet. From the plentiful pottery débris, including many specimens of fine painted ware, it is evident that occupation of these sites falls into the chalcolithic period. Only at one mound, the POZHŌI-DAMB, near the caravan route leading from Surāb towards the Rakhshān valley, were glazed potsherds of the Muhammadan period traceable. Two interesting mounds surveyed on December 19th in the neighbouring side valley of ZAYAK would have invited trial excavation if it had been possible to secure any labour. But the whole tract was deserted at this season, all the inhabitants having moved off with their flocks into distant glens of the mountains for shelter from the bitterly cold winds. The abundant remains of painted pottery showed that the two closely adjacent sites of Zayak had been occupied all through the chalcolithic period down to early historical times.

From Zayak where the motor track was struck again the journey led south-westwards down the great RAKHSHĀN VALLEY, the northernmost of the main divisions of Makrān. For a distance of fully 65 miles no water was to be found at that season anywhere near the road. At two points along it sites were examined which by the evidence of their painted pottery could clearly be recognized as chalcolithic. The second of these, known as KARGUSHKI-DAMB, is a very large one, evidence of prehistoric occupation extending over an area more than half a mile in length. It was revisited from the point, eleven miles away, where water was first obtainable near the small village of NĀG. A small trial excavation was made on the top of the mound with the help of a dozen men, all that could be secured from Nāg. It brought to light structural remains of careful stone masonry and associated with them painted pottery of the same type which had been excavated by Mr. Hargreaves at the chalcolithic cemetery of Ñāl. That the first occupation of the site went back to a much earlier prehistoric period was proved by ceramic finds from the lower strata of the mound. Equally important is the clear proof which the position of the site, so far away from the nearest water, affords as to a notable change in the climatic conditions of this region. In the vicinity of Nāg, too, indications of extensive occupation from an early chalcolithic period onwards were traced.

For a stretch of full eighty miles lower down the wide stony peneplain on either side of the Rakhshān valley showed no sign of permanent occupation, whether ancient or modern. Then the oasis of PANJGŪR was reached, the chief centre of population in northern MAKRĀN and the headquarters of the Makrān Levy Corps which guards for a stretch of some two hundred miles the border towards the unsettled tracts of Persian Balūchistān. Numerous 'dambs' were reported within and along the narrow belt of cultivation which here stretches along the Rakhshān river and is irrigated from *Kārēzes* and

pools holding flood water. But careful examination revealed only at one or two of these mounds scanty traces of prehistoric occupation, while at almost all ceramic remains from Muhammadan times were much in evidence. The scantiness of prehistoric remains both at PANJGŪR and TURBAT, the chief oases of Makrān which owing to their irrigation resources claim economic importance, is significant. Peculiar local conditions which may help to explain this observation have been discussed by Sir Aurel in his detailed account.

During the brief stay at the PANJGŪR headquarters much friendly help and hospitality were received from Captain D. R. Smith, Assistant Political Agent and Commandant, Makrān Levy Corps. The careful arrangements which this experienced political officer kindly made for escorts, etc., from the different posts of the Corps not only assured safety while moving along the Persian border but also greatly facilitated the survey of ancient remains to be found in its vicinity. By using the newly made motor track which connects the frontier posts from Grawak to Parōm it became possible during the closing days of the year to visit quite a number of small but interesting prehistoric sites on a long stretch of ground, now desolate and forbiddingly barren almost throughout. It was curious to find that most of the little posts with their entrenchments and dug-outs were placed on the top of small mounds which had been formed by the accumulation of débris from modest habitations of the chalcolithic period. It was a procedure easily accounted for by the better command of the ground it secured. It is likely to have been followed more than once also on the Eastern and African *Limes* lines of the Roman empire where they crossed desert ground just as liable to barbarian raids as this border of Makrān is to cattle-lifting forays of Baluch parties from the Persian side.

Particularly striking was the discovery of a series of prehistoric mounds stretching along, and westwards of, the geographically interesting drainageless BASIN OF PARŌM. It holds in its centre a great salt marsh, the 'Kap', usually dry except after seasons of very heavy rainfall. Good grazing is to be found along the edge of the marsh near its head and beyond up to the watershed on the Persian border. While Parōm is now visited only by a very scanty nomadic population, there are found here stretching in a line from DIZ-PARŌM to SHAMĪ-DAMB not less than seven mounds, all proved by painted potsherds of characteristic type to have been occupied in early chalcolithic times. At only one of them was there evidence of occupation also in mediæval times. Of particular interest was the discovery at the JĀI-DAMB of plentiful fragments of a fine grey ware, either painted or plain, of which only rare pieces had been found before at one of the early chalcolithic mounds of Zhōb and at the wind-eroded sites of the same period in Sīstān. There they had been recognized as obvious imports from another part, while in Parōm the manufacture was evidently local or carried on at no great distance.

From Parōm Panjgūr was regained, and thence a journey of some 150 miles, by the difficult motor track through the Central Makrān range and down the Kēj valley, brought Sir Aurel Stein's party by January 4th to the oasis of TURBAT. Known also simply as KĒJ, it is the present administrative centre

of Makrān, and has been its chief place all through Muhammadan times. A short stay there made it possible to collect much useful local information about ancient remains in the Kēj valley and to examine those in the vicinity of the oasis. Two among the sites surveyed, the mound of SHĀHĪ-TUMP and the extensive ancient burial ground of ZANGIĀN, were recognized as of early date and reserved for subsequent exploration. The huge pile of the MĪRĪ, the ruined stronghold which had sheltered the rulers of Makrān down to modern times, proved to have been built up to its present towering height on the top of an ancient débris mound. Painted potsherds of early chalcolithic type were collected on the latter.

After five marches from Turbat in the course of which serious trouble was met through sudden floods in the torrent beds of the Makrān Coastal Range, the important prehistoric site of SUKHTAGĒN-DŌR was reached in the DASHT VALLEY. Through this the Kēj river has cut its way to the sea. Close to the point where it passes the last of the utterly bare foothills there rise a small cluster of rocky ridges joined up by lines of remarkably massive walls into a defensible position of considerable strength. That this had been occupied during the chalcolithic period appeared probable from Major Mockler's brief notes on the excavations he had made here in 1875. This conclusion received full confirmation by the results of a week's strenuous exploratory work. Trial trenches opened at different points of the débris-covered slopes both within and outside the circumvallation brought to light remains of stone-built dwellings and within them interesting relics of daily life in the shape of fine ceramic ware and of implements in stone and copper. Fragments of remarkably well made red pottery as well as flint 'blades', scrapers and arrowheads could be picked up in profusion also on the surface.

The contents of large cinerary urns excavated outside the wall proved that the burial customs had been the same as at the early chalcolithic sites of Zhōb. The resemblance is very close, too, in the decorative style, colouring and fabric of the painted pottery. But the rarity of the latter in comparison to the great abundance of undecorated ware of the same superior fabric seems to point to a stage of chalcolithic civilization somewhat less advanced than that of the Zhōb sites or that represented by the prehistoric mounds in the Sīstān desert. A similar indication is furnished by the disproportionately large quantity of stone implements found at Sukhtagēn-dōr. Early abandonment of the site is suggested by the total absence of painted pottery of the Nāl type and of those terracotta figurines of the hump bull and the 'goddess' which were so plentiful at the chalcolithic sites of the central Makrān and Jhalāwān visited later and referred to below.

By proceeding from here to the small port of GWĀDAR and thence to JĪWANRĪ, the westernmost fishing hamlet on the Arabian Sea coast within British Makrān, Sir Aurel Stein was able to gain some acquaintance with at least a portion of those dreary shores of the Ikhthyophagoi along which Alexander's fleet under Nearchos had slowly made its way from the mouth of the Indus towards the Persian Gulf. Small 'dambs' mentioned by Major Mockler

at GATTI, a small hamlet under the bold heights of Jabal-i-Mahdi to the east of Gwādar, proved to be small burial cairns exactly of the same type as first discovered at Moghul-ghuṇḍai in far-away Zhōb. Here, too, there was evidence that these deposits comprising small fragments of human bones dated from early historical times which knew the use of iron. At Gwādar itself only remains of the Muhammadan period survive. But on moving westwards along the desolate coast lined by fantastically eroded cliffs of clay and limestone another early burial place was traced on the rocky headland of TĀKE-DAP. The humble funerary deposits found within the little circular stone heaps left no doubt that the remains were those of fishing folk, like the Ikhthyophagoi or 'fish-eaters' of Alexander's time, predecessors of the present Meds. Extensive kitchen middens composed of fossilized shells of all kinds were found by the side of the cairns; they seemed to show that this bleak plateau had been the scene of too many a feast by the living.

A far larger ancient burial ground which Major Mockler had already briefly noticed, was subsequently explored on a rocky plateau by the sea to the north of the fishing hamlet of JĪWAṆRĪ. Here some two hundred rough stone enclosures are scattered in groups over a distance of more than a mile. In the course of several days of strenuous work the great majority of these were systematically opened and searched. Here, too, the burial customs proved to be similar to those already mentioned. But the funerary deposits were often on a far more generous scale, including many complete pottery vessels, plain or decorated, ornaments in copper, beads and iron implements. The latter, like the shape and decoration of the pottery jars, bottles, etc., left no doubt that these burial remains date from a period later than that of any of the chalcolithic sites of Makrān. It was interesting to observe that in some cases the fragments of human bones deposited were of larger size, showing no definite marks of calcination. The assumption seems justified that these remains represent partial burials of bodies which had been exposed to birds and animals more or less after the Zoroastrian fashion. Diodorus' account of Alexander's march from the Indus towards Gedrosia or Makrān directly attests this practice among the Oritai whose territory, roughly corresponding to the present Lās Bēla, was the next on the east to the coast of the Ikhthyophagoi.

Political considerations would not allow of the permission applied for to be granted to Sir Aurel for a visit to the remains of DAMBA-KŪH and DARMĀNI-BĀN situated within the territory of the practically independent chief of Dashtiārī and only about sixteen miles across the Persian border. Judging from Major Mockler's description they are burial grounds closely corresponding to those of Jīwaṇrī and apparently even more extensive. So the journey was now directed northward to the border post of MAND. It was reached after four marches from the coast, mostly through wholly uninhabited ground. Mand is situated in the valley of the Nihing, a considerable tributary of the Kēj river. In it cultivation is at several points possible by irrigation from flood canals and accordingly several ancient sites were here traceable. Here reference must suffice to the high mound of NAZARĀBĀD, below Tump which from

finds on the surface of fine painted pottery and worked-alabaster could be definitely recognized as dating from the chalcolithic period.

By February 9th Turbat was regained where two tasks of special interest awaited attention. About three miles to the south-west of the Turbat fort there extend by the rocky banks of a wide flood bed large groups of burial cairns exactly corresponding in character and size to those of Jīwaṇrī. Close on five hundred were counted on the right bank alone and at least a couple of hundred more are scattered over equally bare ground on the other bank. The size of this necropolis to which the name of ZANGIĀN is usually applied is such as might be expected near an important oasis. The close search made of sixty-nine cairns disclosed burial customs of the same type as those observed at Jīwaṇrī. Here too a number of the cairns yielded sets of complete pottery vessels, showing close relation in shape and coarse fabric to those of the former site. Apart from smaller copper and iron objects there were found also two iron sword blades. The human bones showed here *mostly signs* of cremation, but this was not the case with the horse heads which were found deposited with them in two cairns, probably remains of favourite mounts immolated on occasion of the funeral rites. It is clear that this large necropolis belongs to historical times, perhaps to the early centuries of the Christian era as is the case at Moghul-ghuṇḍai. Closer determination might be expected here from prolonged exploration. But this was precluded by the time which had to be devoted to excavations at the site of SHĀHĪ-TUMP ('the royal mound').

This small but important mound rises close to the southern edge of the cultivated area about four miles to the west of the Turbat headquarters and has given its name to the adjacent village of Tump. Its prehistoric origin was indicated at the outset by the abundant chalcolithic pottery débris which covered its slopes while later ware was conspicuously absent. The comparatively modest dimensions of the mound, 27 feet in height and about 85 yards in diameter at the foot, and the plentiful supply of labour from the adjacent villages made it possible here to cut a broad trench right through to the centre and down to the surrounding ground level. This excavation clearly demonstrated that the mass of the mound was formed by the débris of decayed dwellings. The plentiful pottery remains, both plain and painted, showed that the dwellings belonged to the same chalcolithic period as at the sites of Sukhtagēndōr and Zhōb.

But it was a novel feature that besides many small stone implements such as 'blades' and scrapers, there were found here at certain points of the lowest strata quantities of small terracotta figurines of humped bulls, all reproducing the type of the 'Brahmani bull' of India and most of them modelled with distinct naturalistic skill. From the way in which these bull figurines were found, collected into little heaps, and from their abundance in similar conditions also at the chalcolithic sites of Kolwa and Mashkai, it became evident that their deposition was connected with some object of worship. Similarity with the humped bull of Śiva, the emblem of creative power, necessarily suggests itself and hence also the question whether there may not be recog-

nized here the influence of an ancient cult established already in pre-Aryan India.

In some respects even more interesting was the discovery that the top of the mound, obviously long after the latter had been formed by the gradual accumulation of débris, had served as a place for prehistoric interments. Careful excavation revealed here quite a series of graves in which complete bodies had been laid to rest, in all cases with plentiful funerary provision for another life. These were represented by a variety of painted pottery, such as bowls, vases, cups and jars; with some of the bodies such vessels amounted to several dozens. With the bodies were found implements and weapons of copper, also of stone, as well as personal ornaments such as copper plaques and beads of agate, onyx, lapis lazuli, etc. There could be no possible doubt, considering the position of these burials, that they all belonged to a later phase of the local chalcolithic civilization. Hence the observations made as regards the shapes, fabric and ornamentation of all this mass of funerary vessels have proved distinctly instructive. Most of them reproduce the style of the early chalcolithic ware in archaicizing fashion, but with that careless conventional execution which is characteristic of articles not intended for practical use but only serving a symbolic purpose. But besides there were found here, though rarely, also jars shaped and painted in the peculiar style of the Nāl pottery, such as were evidently in contemporary household use. Thus a very useful criterion of quasi-chronological value was obtained.

After eleven days' hard work at Shāhī-tump it became possible by February 24th to leave Turbat where the heat of the low lying valley was already making itself tryingly felt, for fresh explorations eastwards. They led first up the Kēj valley where two prehistoric mounds could be surveyed near Hōshāb on ground long abandoned by cultivation. Then the tract of Kolwa was entered. This comprises a broad stretch of open valley ground which flanked by the Central and Coastal ranges of Makrān extends for about a hundred miles towards the westernmost hills of Jhalāwān. Most of the alluvial soil in the two drainageless basins between which this great trough is divided, is potentially fertile. But owing to the precarious nature of the rainfall and the consequent scantiness of the semi-nomadic population dry crop cultivation is restricted to only a very small portion of this great area. All the same Kolwa is famous for its barley the crop of which in years of adequate rainfall is an asset for the whole of Makrān.

But the great change which has come over this tract since prehistoric times is significantly illustrated by the fact that while the present population is estimated in the Makrān *Gazetteer* at only about 2,400 souls, the rapid survey effected proved in Kolwa the presence of not less than seventeen mounds marking settlements of some size occupied during the chalcolithic period. They are scattered by the side of, or near to, the two main routes which pass on opposite sides along the whole length of the tract, and in consequence the examination of all of them implied a good deal of effort.

Several of these mounds, as at Segak, Zik and Kulli are so large that they may justly be taken as marking the position of small townships. But only at

the 'damb' of KULLI, was it possible with due regard to the available time to test by trial excavations the conclusions derived from the survey of the surface features, including the abundant remains of decorated pottery. This mound, showing a length of about 400 yards and a width of not much less, rises to a height of about 30 feet. Like almost all the Kolwa mounds it is so closely strewn with stones on its slopes that it might easily be taken for a natural hillock. In reality all this debris results from the decay of structures built with slabs of easily worked freestone obtained from the neighbouring foothills. The lines of walls could in many places be traced on the surface. In the case of the ruin excavated they proved to contain an isolated dwelling house composed of four rooms. Only the cellar-like ground floor was preserved with walls still standing to a height of over nine feet.

Within the rooms and around them a great quantity of well made ceramic ware as well as stone utensils were brought to light. They were often still in the place where the last occupants left them and illustrated the household life of the period. The abundant painted pottery for the most part closely resembled in type that of the early chalcolithic sites of Zhōb and Kēj, but in addition displayed also plant and animal forms so stylized as to suggest a long period of development. On the other hand the intricate geometrical patterns of the Nāl type and their polychrome treatment were here absent. One of the specially interesting finds made within one of the rooms was that of a complete necklace composed of large elongated beads mostly of pinkish agate, finely worked. It was carefully hidden under a layer of ashes in a small painted jar, damaged in antiquity. It had been left by the owner among broken cooking pots on a hearth, no doubt, at a time of emergency.

Still more interesting was the fact that a trial trench cut through another part of the mound, just as at Shāhī-tump, revealed humped bull figurines in such numbers and often so closely packed in the lower strata that their connexion with some cult or rites could scarcely be doubted. In addition there turned up also some figurines showing the head and bust of a richly ornamented female. There was a striking similarity in the archaic treatment of the type to the figurines of which a few had come to light at chalcolithic sites of Zhōb and Lōralai and been then already recognized as probably representing a 'mother goddess' or divinity of fertility.

Beyond the Kulli site the wide trough of Kolwa gently sinks down towards the valley of the Mashkai river which belongs to Jhalāwān and drains south into the Arabian Sea. Where it adjoins Kolwa the valley opens out and affords room for a number of small permanent settlements collectively known as ĀWARĀN. It was significant to find that while among the half dozen of ruined sites here surveyed most had been abandoned since prehistoric times two at least offered evidence of occupation continued down to the Muhammadan period. The fact that irrigation from the Mashkai river is possible for part of Āwarān accounts for this difference from the conditions observed in Kolwa. There the configuration of the ground devoid of any distinct river bed never offered facilities for regular irrigation. Hence the presence in Kolwa of so many mounds

indicating close occupation restricted to prehistoric times distinctly supports the conclusion that the climatic conditions then prevailing must have provided a more adequate rainfall than the present one. Once the climate had become drier permanent occupation on any considerable scale was bound to have ceased in Kolwa and to have given way to such semi-nomadic cultivation as now prevails there. Obviously the latter is not likely to leave behind any easily recognizable archæological traces on the ground.

Evidence of such a change in climatic conditions, *i.e.*, 'desiccation' to use a conveniently brief term, was found also in the Jhau tract, reached by two marches across the hills east of Āwarān. It comprises an open portion of the valley of the Nāl river which lower down unites itself with the Mashkai river and forms the Hingol. Here the survey showed three conspicuous mounds not far from each other. They are situated on ground where spasmodic cultivation over patches has been carried on down to modern times but owing to the rare occurrence of adequate rain floods has ceased now for many years. The largest of them, called Siāh-damb, the 'black mound', from the débris of stone-built structures which everywhere covers it, is quite as large as that of Kulli and rises to a height of about fifty feet. Its remains of painted pottery, terracotta figurines, etc., proved it to have been formed during the same period of chalcolithic civilization as the Kulli-damb. Of the other two mounds, high but much smaller and both called Spēt-damb from the white clay of decayed mud-built dwellings, one was shown by its pottery to date from late prehistoric times, while the third and smallest could clearly be recognized as occupied during the Muhammadan period. It is certain that all three mounds could have risen to such heights above the flat bottom of the valley only while the ground nearby was under permanent cultivation. Now such is to be found only five miles higher up the valley.

Conditions closely similar to those of Jhau were found also in the smaller valley of Nūndara which the route to Jhau crosses half-way from Āwarān. Here two prehistoric mounds were traced, both of considerable size and both proved by their abundant painted pottery to belong to the chalcolithic period. The southern one known as Tikri-damb lies fully six miles away from the nearest point to which water from the flood bed of the valley can now be brought for cultivation in years of adequate rainfall. The other mound, also known as Siāh-damb from the débris of its stone-built structures, rises by the side of this floodbed and about two miles above the point just mentioned. The presence of a well made trial excavations here possible. Carried on for four days under the trying heat of spring at this comparatively low elevation and with very limited labour, they permitted two small dwellings with solidly built stone walls and peculiar structural features to be cleared. The painted pottery which was found in abundance, both within them and everywhere around the structural remains cropping out on the surface, showed throughout the elaborate decoration of the Nāl type. Significantly enough not a single of the terracotta figurines so common as Shāhī-tump, Kulli, etc., could be found here. Had the cult with which they were probably associated, ceased by the time when this type of pottery came into use?

After returning to Āwarān the survey was continued up the MASHKAI VALLEY for a distance of more than a hundred miles. Over a considerable portion of this it proved classical ground for the study of those 'GABR-BANDS' which abound here, even in the lower part of the valley where owing to its confined nature and the utter bareness of the gorges debouching into it no cultivation is now-a-days possible. Close examination of these ancient embankments and terraces, built everywhere with massive walls of rough stones, conclusively showed that they had throughout served the purpose of collecting, directing, or storing the drainage from the slopes nearest to whatever ground could by great labour be made capable of cultivation. In most places it appeared very improbable that the present rainfall would permit of such ground as these 'Gabr-bands' were meant to provide with water, being turned to any agricultural use. But it may be considered as certain that the vast amount of labour involved in the construction of these works, almost always on utterly barren rocky ground, presupposes a far denser population than either this or any other portion of Jhalāwān could possibly support at the present time. This, too, clearly suggests 'desiccation' since prehistoric times; for it is to these as the period of construction that the cumulative evidence of archæological indications seems definitely to point.

Some distance below the village of Gurjak the bottom of the valley widens, and irrigation from springs and pools in the river bed becomes available over narrow stretches of ground. Hence along this middle portion of the Mashkai valley a succession of mounds were met with. Among them the mounds of MĀLASBAND and SHĀHDĪNZAI, both of considerable size, seemed to have been occupied during several phases of the chalcolithic period, as indicated by the types of painted pottery as well as by the frequent occurrence of terracotta figurines of the kind mentioned. At two other places cinerary urns containing burned bones and ashes were unearthed within small stone enclosures obviously like those of Jīwanṛī and Zangiān belonging to early historical times.

A great mound of particular interest was found to be situated close to irrigated fields about a mile and a half below the village of JEBRĪ. It is known as MEHĪ-DAMB and rises to fully 50 feet above the village lands from which it takes its name. Remains of massive stone-built walls could be traced buried in débris on its slopes. Many pieces of fine painted pottery of early chalcolithic type as well as of the Kulli type attracted attention to a terrace on the western slope of the mound, and there systematic excavation for which adequate labour was here fortunately available brought to light a burial ground with plenty of interesting remains. Here an area of close on 600 square yards contained numerous burial deposits of cremated bodies, both within urns and without them, together with well-made pottery articles both plain and painted as well as copper ornaments and utensils.

Villagers digging for pots had disturbed the top layer in places, but enough deposits remained to permit the burial customs to be definitely determined. In some cases there was evidence that the bodies had been burned on the spot. Very striking was the great quantity of terracotta figurines, both of humped

bulls and of busts representing the 'mother goddess'; they were here recovered in hundreds. A trial trench cut below the terrace proved that also in the thick layer of débris covering the slopes of this outlying portion of the mound remains of cremated bodies had been buried in the same manner as on the terrace above. The finds made in another trench carried to the top of the mound clearly showed that the period of these deposits was approximately co-eval with the occupation of the mound in chalcolithic times. Throughout the ceramic ware in shape and decoration closely agreed with the types found at the early chalcolithic sites of Zhōb or at Kulli. Of complete burials such as those on the top of Shahī-tump and at the Nāl necropolis no trace was discovered; nor was the peculiar Nāl type of painted decoration to be found except on two small fragments, and those picked up on the surface. While no stone implements were recovered at the Mehī-damb, a small mound to the north-east of Jebrī far away from water displayed them in plenty on the surface along with very coarse hand-made pottery which might well mark neolithic occupation.

Before leaving the Mashkai valley near its head the mound of Sunērī was visited. It was shown by the types of decorated pottery found there to have been occupied both during late prehistoric as well as during early historical times. The interest of this fairly large site lies in the fact of its lying fully three miles away from the nearest perennial supply of water. From here the route turned north-eastwards across rugged hills into the drainage area of the Nāl river. Of three mounds in the tract of Grēshak the small ones of Gwani and Jāwarjī seemed to have been formed during late prehistoric times, while the occupation of the more imposing one of Sāka-Kalāt, crowned at one end by a ruined fort of modern date, evidently goes back to the same period as that of Mehī and Kulli. Owing to inadequate rainfall for a succession of years the whole tract was practically deserted. No trial excavation would have been here possible even if time could have been spared.

By March 31st Nāl was reached and on the following day a rapid examination made of the Sohr-damb, the scene of Mr. Hargreaves' important excavations and of a few small sites in the same wide valley trough, none of the latter of very early date. Then Khozdār was gained. The cultivable ground is here limited. But since this cluster of villages is possessed of plentiful water from the Kulāchi river and situated at a point where two main caravan routes from Sind to Makrān and from Kalāt to the sea cross, it has claimed some importance all through the Muhammadan period. A number of small sites with mediæval remains was hence traced here besides the mound known as Chimrī where painted pottery débris attests occupation going back to later prehistoric times.

From Khozdār a long motor drive by the route leading towards Lās Bēla made it possible to reach the wide plateau of Wadh by April 4th. At the half dozen small sites examined here, most of them situated on isolated rocky hillocks offering advantages for defence, painted potsherds of late prehistoric type were found; at some of them also glazed ware indicating mediæval occupation. The four mounds of modest size subsequently examined in the trough of Drākala. further south, also proved to have been occupied during

later chalcolithic times; some Nāl type pottery was found at two of them besides painted ware such as seen in Besēma, Sunērī and Grēshak. Remains of stone-built structures which were examined on a rocky ridge in the valley of Wāhir on the way back to Khozdār, evidently go back to a somewhat earlier period; for here painted pottery fragments of the Kulli-Mehī type mingled with far more numerous ones displaying the characteristic ornamentation of the Nāl type.

A break in the journey northward from Khozdār made it possible during a long day's ride to examine a series of small mounds scattered over the wide valley of Bāghwāna. They all showed evidence in their painted pottery of having been occupied during later prehistoric times, and on two of them stand modern dwellings. Only on the steep rocky ridge, known as Lōndō-damb from the hamlet at its foot, could potsherds of earlier chalcolithic type be found by the side of the plentiful 'late prehistoric' ware. Much decayed remains of solidly built walls of stone crown the narrow crest of the ridge which provided a naturally strong position, and a humped bull figurine picked up just below makes it probable that this position was held from an early period.

On the way from Bāghwāna an opportunity offered near the pass of Lakoriān to make a careful survey of a remarkably large and massive 'Gabr-band' which had attracted already the attention of that observant old traveller, Charles Masson. It proved a fine example of an undoubted ancient barrage intended to store drainage from the small *Nullahs* above in a large reservoir wherefrom to irrigate terraced fields in the valley below. Together with smaller 'Gabr-bands' higher up it affords striking proof of early engineering skill, in all probability prehistoric.

A two days' halt at Kalāt, the sadly decayed 'capital' of the State, was used for an examination of whatever 'dambs' were reported in the vicinity. They are all quite low and from the evidence of their pottery must be ascribed to occupation during historical times. This circumstance is noteworthy and may possibly be connected with the fact that cultivation in this pleasant small oasis is carried on mainly with the help of Kārēzes. These can scarcely be credited with any but comparatively late origin within historical times.

On the way to Mastung occasion was taken to examine two mounds which rise conspicuously within the wide Kārēz-irrigated trough of Mungachār. The one known as Sālu-Khān-damb, from the village at its foot, is small. None of the plain pottery, all coarse ware, or of the few painted fragments found on or around looked older than the Muhammadan period. The other mound, known as Saiyid Maurēz-damb from the name of a saint whose supposed grave occupies the top, is much larger and rises to a height of some fifty feet above the graveyard at its foot. Here the great majority of painted potsherds lying on the slopes show patterns of 'late prehistoric' type. But at the foot of the mound some painted fragments were picked up which are ornamented in the Nāl style as well as others with neatly executed geometrical designs of distinctly earlier type.

The site marked by the Maurēz-damb must for the present be considered the earliest so far examined within Sarawān; for the conspicuous large mounds

within the well-cultivated tract of Mastung must certainly be ascribed to the historical period. In the case of the SĀMPUR-DAMB this has been proved by the fruitful excavations here made by Mr. Hargreaves in 1925 when objects dating from the early centuries A. D. came to light. The pottery found on the surface here and at the mound of HĀZARGANJĪ close by fully agrees with this dating. The same conclusion could be drawn from the decorated pottery, none of it painted, found on the large and high mound known as SPĒT-BULANDĪ. The finds in the trial trenches opened on the slopes included some iron implements and entirely confirmed this diagnosis. Here the exploratory work of the tour was concluded, and on April 15 Quetta was regained *finis longae chartaeque viaeque.*

Mr. F. H. Andrews.

I resumed work in the CENTRAL ASIAN ANTIQUITIES MUSEUM on the 22nd October 1927 and brought to completion the arranging of the Central Asian wall paintings on the walls of the Museum, from which they had been removed in 1925-26 for photography, and the cutting, fitting and fixing of the asbestos sheet background. A considerable number of the unmounted fragments, which did not form part of any of the large compositions were mounted either singly or in groups and such as were suitable were set up on the walls. The remainder were stored in special almirahs for convenient reference. In addition an ancient painted dome, which forms an important item of the collection, was reconstructed. but some work on this still remains to be done.

Of the forty-six cases of Central Asian antiquities and photographic negatives brought by me from London this season thirty one were unpacked, checked and placed in numbered trays in the rooms allotted for the purpose in the upper storey of the building of the Imperial Record Office, New Delhi. As these rooms were furnished with the required show cases only as late as the middle of February 1928, the unpacking of the boxes of antiquities could not be started before the first week of February 1928.

During the season under report Mr. Qureshi Moneer, an Archæological Scholar, was deputed by the Director General of Archæology to assist me in the above work in order that he might acquire a general knowledge of Central Asian Antiquities under my guidance and learn as much as possible of the method adopted in the Central Asian Antiquities Museum for mounting wall-paintings.

SECTION VI.—ARCHÆOLOGICAL CHEMIST.

The rich harvest of antiquities yielded by the extensive excavations carried out by the Department, this year, in Upper India and Burma, imposed heavy duties on the Archæological Chemist, Mr. Mohd. Sana Ullah, and his staff, a very considerable number of antiquities being chemically treated, both in the field as well as in the laboratory at Dehra Dun. In consequence of the increasing demands on the Archæological Chemist, Dr. Hamid was appointed as Assistant Archæological Chemist in June 1927.

The number of antiquities treated chemically this year was as follows:—

(a) At Mohenjodaro	1,700
Harappa	387
Taxila	216
Lahore	187
TOTAL	2,490
(b) At Headquarters from—	
Central Circle, Patna	59
Indian Museum, Calcutta	16
Northern Circle, Lahore	217
Eastern Circle, Calcutta	15
Burma Circle	279
Central Museum, Lahore	125
Jhukar (Sind)	123
TOTAL	834
GRAND TOTAL	3,324

These antiquities consisted chiefly of copper, bronze, silver, gold, iron and stone. Ordinary pottery, terracotta and stone objects which were treated, as usual, by the Modellers attached to the excavations, under the directions of the Archæological Chemist have not been included in the above list.

Apart from the chemical treatment of antiquities, considerable analytical work was carried out in the laboratory at Dehra Dun. The objects analysed, either for identification or elucidation of their technique, consisted of mortar, lime, faience, earthenware, steatite, 'salajit,' 'lollingite,' haematite, fluor spar, copper, bronze, etc. Some of the more interesting analyses are given below:—

	Per cent.
(a) Mortar from the Tank, Mohenjodaro,	
Gypsum, $CaSO_4.2H_2O$	43·75
Calcium Carbonate, $CaCO_3$	13·78
Sand	38·04
Alkaline salts, (soluble in water)	2·47
Moisture	1·96
TOTAL	100·00

	Per cent.
(b) Mortar from Hr. site, Mohenjodaro,	
Gypsum, $CaSO_4.2H_2O$	63·25
Calcium Carbonate, $CaCO_3$	1·64
Sand	31·52
Alkaline salts, (soluble in water)	2·58
Moisture	1·01
TOTAL . .	100·00

(c) A specimen of similar composition with a little calcium carbonate has also been examined. Another specimen of mortar was composed of 56·7 per cent. gypsum, 25·0 per cent. calcium carbonate, the remainder being sand and foreign matter.

It is obvious that the mortar employed by the inhabitants of Mohenjo-daro was composed of gypsum and sand to which lime in a lesser proportion was sometimes added;

(d) bronze buttons (Hr. 6186), Mohenjodaro, Cu, 89·1; Sn, 10·6; Fe, 0·3; total 100·00. This is a specimen of high grade bronze.

(e) bronze rod (Hr. 4964), Mohenjodaro, Cu, 69·76; Su, 6·65; Pb, 22·83; Ni, 0·33; Fe, 0·41; total 100·00. This bronze contains a high proportions of lead and is well suited for casting.

(f) a lump of refined copper had the following composition:—

Cu, 99·33; Fe, 0·41; Ni, 0·26; Pb. nil; Sn, nil; Sb, nil; total 100·00;

(g) a coal-black substance from Mohenjodaro was identified by the Archæological Chemist as 'salajit,' which is a well known ancient medicine. It contained over 44 per cent. inorganic matter which has been analysed by Dr. Hamid. The results of the analysis are as follows:—

H_2O, 15·99; SiO_2, 8·23; Fe_2O_3, 1·44; Al_2O_3, 2·43; CaO, 7·31; MgO, 0·32; K_2O+Na_2O, 9·04; total 44·76.

(h) a specimen of serpentine (Dk. 1470), from Mohenjodaro analysed by Dr. Hamid for its identification had the following composition:

SiO_2, 39·11; Al_2O_3, 0·84; Fe_2O_3, 9·53; MgO, 36·09; CaO, 0·77; H_2O, 14·19; total 100·53;

(i) the results of the analysis of a coin from Lucknow Museum by Dr. Hamid are as follows:—

Gold, 10·53; silver, 13·63; copper, 75·82; total 99·98.

The Archæological Chemist attended the session of the Indian Science Congress held at Calcutta in January 1928, and on the return journey visited the Museums at Patna and Lucknow, and halted at the Nalanda excavations in order to give instructions on the treatment of pottery and terracotta found there. In August, he attended the conference of the departmental officers held at Simla and read a paper on the Copper and Bronze Antiquities of Mohenjo-daro. In November, he treated certain moth-infected carpets in the Fort Museum, Delhi, with hydrocyanic acid, and later visited Lahore in order to treat certain coins in the Central Museum.

The treatment of the antiquities at the excavations at Taxila and Harappa, during the winter season, was undertaken by the Archæological Chemist and occupied him one and two months respectively. The Assistant Archæological Chemist was deputed to Mohenjodaro on corresponding duty, in November, and remained there for four months.

In November, Mr. Sana Ullah was deputed to Jaipur, at the request of the Superintending Engineer of that State, in order to advise him regarding the preservation of the frescoes in the Pundarikji's house and certain woodwork at the Amber Palace and reports as follows:—" After a careful examination of the frescoes in the Pundarikji's house, I have come to the conclusion that the peeling of the colours is due to two causes. The plastered wall was evidently given a wash of white micaceous kaolin to impart to it a bright white surface, before the application of the colours. The kaolin coating does not seem to adhere well to the smooth plastered surface below, and this has contributed to the peeling. The second cause is the deterioration of the organic binding medium (*i.e.*, gum, glue, etc.,), which was employed for mixing the colours. This deterioration takes place rapidly in a damp warm, stagnated atmosphere such as prevails there in the rainy season. In my opinion, it is necessary to open up the closed ventilators and windows in order to improve the ventilation of the chamber. To replace the binding medium of the colours, I recommend the application of a thin solution of cellulose acetate." For the fixation of the inlay work of the wooden doors at the Amber Palace, the Archæological Chemist recommended shellac or copal varnish, and for the removal of mildew on the ceiling, the application of dilute ammonia solution followed by dilute hydrogen peroxide.

The Managing Representatives, All-India Swetember Jains, Ahmedabad, also sought the advice of the Archæological Chemist for the removal of black stains from marble sculptures in the Kumbhariaji temples, in Dānta State, and he recommended a 3 per cent. solution of caustic soda containing a little hydrogen peroxide.

Mr. Sana Ullah has contributed a chapter on 'Copper and Bronze' to the first volume of the Mohenjodaro Memoir.

SECTION VII.—TREASURE TROVE.

PUNJAB.—The 2,341 copper coins mentioned in the last year's report as discovered at the village of NANDIALA WARAICH, Tehsil and District Gujranwala, were found on examination to include a large number of duplicate issues, hence only 1,403 coins representing the best specimens have been selected for acquisition and distribution among the museums. The rest numbering 938 were rejected and returned to the Deputy Commissioner, Gujranwala, for disposal.

The new finds reported during the year under review were two hoards consisting of 76 and 46 silver rupees discovered at the village SHAMSABAD in the Tehsil and District of Attock and at the village ASAL, Tehsil Kasur, District Lahore, respectively. The coins from Shamsabad are Afghan silver rupees of Muhammad Shah Durani, those from Asal, include silver rupees of the Mughal Emperors Aurangzeb, Shah Alam, Bahadur Shah, Muhammad Shah, Farrukhsiyar, Muhammad Ibrahim and Shah Jahan II. Recommendations for their acquisition have been made to the Deputy Commissioners concerned.

In addition to those mentioned above, 223 copper coins were discovered by the Public Works Department in the course of excavating earth for the construction of terraces at the south wall of the Lahore Fort. They were transferred to the Superintendent, Archæological Survey, Frontier Circle, and consist principally of issues of Akbar. Most of them are, however, so much worn and defaced that it is difficult to identify them.

WESTERN CIRCLE.—The only find of Treasure Trove reported in the Western Circle was a hoard of 852 copper coins received from the Dewan, NAGOD STATE, Central India, in January 1928. They were forwarded to the Superintendent, Archæological Section, Indian Museum, Calcutta, whose report is awaited.

CENTRAL CIRCLE.—Forty eight gold pieces found in the QILA BANKI Government Estate in the Cuttack District and described in detail in the last report, have now been acquired by the Bihar and Orissa Government for the Patna Museum Coin Cabinet at a cost of Rs. 106.

In that report, again, mention was made of 15 silver coins that had been found in the DHENKANAL FEUDATORY STATE in Orissa. These have now been examined by the Curator, Patna Museum, and found to be all of the Bahmani Dynasty of Kulbarga, which was founded by Hussain Gangu in A.D. 1347. This find is of interest as indicating that the Bahmani territories may have extended as far as the present Dhenkanal State. The coins, which comprise the issues of six kings of that dynasty, range from Ahmad Shah I (759-76 Hijri) to Ahmad Shah II (838-62 Hijri). Since the coins are the property of the Dhenkanal State it has been suggested to the Local Government that should the Darbar be agreeable, pieces not required for the State coin cabinet might with advantage be distributed among a number of specified Museums, of which the Indian Museum, Calcutta, would take precedence, in accordance with an arrangement generally followed in such cases.

Mention was also made in the last report of a piece of gold spiral that had been found in the KOLHAN GOVERNMENT ESTATE in the Singhbhum District. This is reported by the Curator to be an ancient ornament and has been acquired for the Patna Museum at a cost of Rs. 162.

Of the finds of coins made in the current year, one, of 38 pieces, was reported from the JALLEY P. S. area in the Durbhanga District. On examination by the Curator of the Patna Museum they proved to be silver punch-marked coins, 27 rectangular, 4 oval, and 7 broken pieces. They are interesting numismatically, the symbols represented on them being the Solar symbol, lotus, tree, caduceus, four-fingered hand, 3-arched *chaitya* surmounted by crescent, steel-yard, bull, and fish. Their acquisition for the Patna Museum cabinet has been sanctioned.

Another find was made at HALIPALI, in the Sambalpur District. This included 17 gold coins and 30 silver coins among other miscellaneous articles, and they have all been sent to the Curator, Patna Museum, for examination.

Two old coins, one copper and the other brass, were offered, unwittingly, for sale to the Archæological Superintendent at the RAJGIR Railway Station. The coins were despatched to the Curator, Patna Museum, for report as to their numismatic value, and as they were said by the vendor to have been found within the Rajgir area, which is protected against the removal of antiquities under Section 18 of the Ancient Monuments Preservation Act, the matter was reported to the Collector, Patna, for investigation, since traffic in such coins contravenes the provisions of both that Act and the Treasure Trove Act. The Curator has pronounced the copper coin to be of the Early Cast type common at Rajgir and Pāṭaliputra. It is rectangular in shape and bears the following symbols: *obverse*: the sacred tree within a railing, three-arched *chaitya*, cross or *vedi* and another, indistinct; *reverse*: an elephant, taurine symbol, triskeles, and the Assyrian Tree of Life. The brass coin bears a crude representation of an unidentifiable deity on the obverse and of an unknown king on the reverse. The coins have been lodged with the Curator, Patna Museum.

Of finds other than coins, one was reported from SILOUR, in the Siwan sub-division of the Saran District. This was of 4 images, comprising one of Vishṇu with 10 *avatāras*, one of Hārītī with a boy in her lap, and two of Hara-Gaurī. The first is a particularly fine specimen in black basalt dating from the 11th century and the others, though not so good and of later date, of some iconographic importance. The four have been acquired by the Local Government for the Patna Museum at a cost of Rs. 300.

A small slate-stone image in relief, very crudely carved, and suggestive of Vishṇu, was found at MANIAMORE, in the Bihpur P. S. area of the Bhagalpur District. It is impossible to date this with any certainty but its acquisition for the Patna Museum has been recommended.

EASTERN CIRCLE.—Only one case was reported under the Treasure Trove Act in Bengal during the year. This was a find of 46 silver coins in village BAMANKANDA in the Bogra District. The pieces proved on examination, however, to be current silver coins and no recommendation was therefore made for their acquisition.

Of treasure trove not consisting of coins, the most important find was reported from the District of Chittagong. In February 1927, one Shaharali Bali of JHEWARI was reported to have discovered 61 Buddhist images, 2 miniature shrines and 3 other fragments of images while digging earth for the erection of his house. The attention of the Archæological Superintendent was drawn to this find in April 1927 by a newspaper report and the Collector of Chittagong was requested to take steps under the Treasure Trove Act for the recovery and acquisition of the hoard. Accordingly the images were recovered from the original finder and kept in the Chittagong Treasury whence they were sent to the Archæological Superintendent's Office. They were then cleaned and chemically treated and a report submitted to the Government of Bengal. As the find is the biggest hoard of images ever found in Bengal, the Government of Bengal decided to acquire it and distribute among the Indian Museum and other institutions in the province. The images included in this collection belong to the Mahāyāna form of Buddhism prevalent in this part from the 7th-11th centuries A.D. Stray examples of Buddhist cult images have been recently recovered in Chittagong, but the present find proves the existence of a local centre of Buddhist art forming a valuable link in the chain of its development and its migration to Burma. Some of the specimens show clear affinities to the bronze images of the Nālandā school, certain others to Burmese bronzes. Thirty three of the images represent Buddha in the *bhūmisparśa-mudrā*, the heights ranging from 15¼″ to 2¼″. Some of the interesting specimens are illustrated in this report (Pl. LVII, *b* and *d*). Other images represent the Buddha standing in the attitude of protection (*abhaya-mudrā*), seated in the attitude of meditation (*dhyāna*) or preaching (*vyākhyāna*). A group representing the Vajrāsana-Buddha, attended by the Bodhisattva Maitreya and Lokeśvara, was also found (Pl. LVII, *c*). Included among the hoard are a number of representations of the Bodhisattvas Padmapāṇi, Lokeśvara and Mañjuśrī and two images representing the Buddhist goddess of wealth Vasudhārā, one of the latter being a very artistic figure, holding an ear of corn and a vase of jewels (Pl. XLIX, *c*). Other important objects included in the find are a miniature of the Mahābodhi shrine at Bodhgaya studded with semi-precious stones of which some are still left, and approximately assignable to the 10th century A.D. (Pl. LVII, *a*), and a votive *stūpa* crowned by two umbrellas.

A hoard of copper, brass and other metal utensils chiefly for ceremonial use was found at PIASBARI near Gaur, District Malda, in digging the foundations of a house. The case was not dealt with under the Treasure Trove Act, the Collector obtaining the specimens by private arrangement and making them over for purpose of exhibition to the Varendra Research Society's Museum at Rajshahi. The utensils number nearly a hundred and include copper dishes, saucers, pitchers, stands, spouted vessels and brass bowls, incense burners, ladle handles with peacock heads, etc. They are all of Muhammadan date.

A gold-plated bronze image of Hevajra, 18″ high (Pl. XLIX, *f*) was discovered in the DHARMANAGAR sub-division of the Tripura State, and is now kept in the State Cutchery at Agartala, the capital. The image is inscribed but

owing to corrosion many details of both the inscriptions and image are uncertain. On the grounds of style and the characters the image may be assigned to the 11th century A.D. Very few representations of this deity have been so far found in India proper, although it is one of the most popular gods in the Buddhist pantheon of Nepal and Tibet belonging to the class known as *Yidam* or tutelary deities. Hevajra is here represented as having seven heads, sixteen hands and four legs, but is not accompanied by his consort (*Śakti*). The animals in the right hands such as the elephant, bull, deer, etc., on skull-cups can be recognised, but the left hands which should have held different deities, also on skull-cups, are damaged. Eight miniature dancing figures wearing skull garlands and holding various weapons such as the sword and spear are shown on different parts of the background and pedestal (*pādapīṭha*). The presence of these eight companions, which are similar to the representation of Heruka, is a special feature of the Dharmanagar image and shows clearly that Hevajra was looked upon as a manifestation of Heruka. The Dharmanagar and the PAHARPUR images of Hevajra (Pl. XLVI, *a*), both found this year, are the first representations of the god found in Bengal, where probably the cult originated about the 10th century, before spreading in the succeeding centuries to Nepal, Tibet and Mongolia.

A discovery of 86 Koch coins by a woman at the village CHAMARIA in the Kamrup District was reported by the Secretary to the Government of Assam, Education Department. Thirty-four pieces were acquired under the Treasure Trove Act for the provincial Coin Cabinet at Shillong and distribution to other institutions in Assam.

SOUTHERN CIRCLE.—Treasure Trove in the Madras Presidency is now dealt with by the Superintendent, Madras Museum, and the following information is taken from his Report:—

Fifteen finds of coins were reported in the Madras Presidency under the Treasure Trove Act. These comprise—(1) 23 unidentified gold Roman coins found in the village GUMADA, Jeypore Taluk, in the Vizagapatam district; (2) 24 gold fanams and 1 gold pagoda of Kanthirava Narasaraya of the Mysore dynasty, 20 gold fanams of Rāmarāya of the Maharatta dynasty together with a copper coin of the Mysore dynasty found in the village MOOKANUR, Omalur Taluk, in the Salem district; (3) 2 unidentified gold coins found in the village KOOTAPADI, Dharmapuri Taluk, in the Salem district; (4) 81 gold punch-marked coins found buried in a field in the village VENNE, Surngavarapukota Taluk, in the Vizagapatam district; (5 & 6) 626 gold *fanams* belonging to Rāmarāya, ruler of the Maharatta dynasty found in the villages ECHANAHALLI and ONNAGARAI, Dharmapuri and Uttangarai Taluks, in the Salem district; (7) 1 gold mohur issued by Muhammad bin Tughlak of the Tughlak dynasty found in the village SAJIPMUDA, Mangalore Taluk, in the South Kanara district; (8) 18 gold *pagodas* issued by the East India Company found in a copper vessel in the village NORTHAMPUNDI, Tirruvannamalai Taluk, in the North Arcot district; (9) 6 gold coins including Madras mohurs, Madras half-mohurs and Madras five rupees of the English East India Company together with 2 Arcot rupees struck

by the East India Company in the name of Alamgir II, A.H. 1172, found in a house in VELLORE town in the same district; (10) 10 gold *pagodas* issued by the later Vijayanagar kings found in the village PAINGINAR, Cheyyar Taluk, in the North Arcot district; (11) 5 gold *pagodas* issued by the later Vijayanagar kings, 8 gold South Indian *fanams* and 4 gold *fanams* with lion marks of an undetermined dynasty found in association with some other articles in the village PILLAIPALAYAM, Conjeeveram Taluk, in the Chingleput district; (12) 34 Mughal silver coins issued from Akbarnagar, Golkonda, Kanbayat, Lahore, Multan, Patna, Shahjahanabad and Surat of Akbar, Shahjahan, Aurangzeb, Muhammad Shah, Shah Alam and Farrukhsiyar found in the village SOOLIPADRA, Rayaghada Taluk, in the Vizagapatam district; (13) 100 silver Arcot rupees, half-rupees, quarter-rupees and one-eighth rupees belonging to Alamgir of the Mughal dynasty found in the village ERAIYUR, Tirrukkoyilur Taluk in the South Arcot district; (14) 23 Arcot rupees of the East India Company, of which 12 were acquired, found in the village DHARMARAO CHERUVAPALLI, Atmakur Taluk in the Nellore district; and (15) 140 copper coins, some issued by the Vijayanagar kings and some by their satraps, the Nāyakas, found in the village ABHISHEKAPURAM, Lalgudi Taluk, in the Trichinopoly district.

Of the finds other than coins the following have been included in the Madras Museum Report for the year 1927-28—

1. 48 copper and copper-gilt images of Buddha, Avalokiteśvara, Jambhala and Vasudhārā, Shaḍaksharī Lokeśvara, Jambhala Siṁhanāda and Tārā (Hts. 3″ to 10½″) from the VELIPALAYAM village, Negapatam Taluk, in the Tanjore district; 246 images obtained from the same place were acquired by the Director General of Archæology in India.
2. 1 copper image of Vishṇu (Ht. 1′10″) from the village ANAIMEAGALRAM, Mayavaram Taluk, in the Tanjore district, handed over to the villagers for purposes of worship.
3. 1 copper image of Chandraprabha (?), the eighth Jain Tīrthaṅkara (Ht. 10½″) found in association with some copper vessels in August 1927 in the TIRUMALA village, Palur Taluk, in the North Arcot district.
4. 9 copper images of Appar, one of Saivaite saints, Pārvatī, Chandraśekhara, Umā with Chandraśekhara, Bālasubrahmaṇya (Hts. 8″ to 1′ 11″) from the village VEMBAVAR, Perambalur Taluk, in the Trichinopoly district.
5. 1 copper image of Chandraśekhara (Ht. 1′ 4″) from the village KAPUGOMPALLI, Bhadrachalam Taluk, in the East Godavari district.
6. 2 copper images of Kālī and a detached *prabhā*, which does not appear to belong to either of these images (Hts. 8″ to 1′), from the village RAMKRISHNAPURAM, Cheyyur Taluk, in the North Arcot district.
7. 8 copper images of Somaskanda, Sambandhamūrti, Appar (a Saivite saint), a Chola king (?), Chaṇḍikeśvara, Bālasubrahmaṇya, Pār-

vati, Śivakāmasundarī (Hts. 1′ 4½″ to 2′ ½″) along with 10 copper articles of worship and a conch with a Tamil inscription, from the village KANDRAKOTTAI, Cuddalore Taluk, in the South Arcot district. The ten copper articles together with some of the images were given to the villagers for worship.

8. 1 copper gilt Buddhist image (?) from the village MELAYUR, Shiyali Taluk, in the Tanjore district.

9. 8 copper images of Manikkavasakar, a Saivite saint, Bālasubrahmaṇya, Pārvatī, Gaṇeśa, Umā with Chandraśekhara, Vishāpaharaṇamūrti, Chandraśekhara, and 37 copper articles for use in temple worship, from the village SETTIPULAM, Tirutturaipundi Taluk, in the Tanjore district.

BURMA CIRCLE.—The Government of Burma acquired under the Treasure Trove Act, on the advice of the Superintendent, Archæological Survey, Burma, 79 silver coins, which were found by a certain villager at THEIN village in Yesagyo township, Pakokku district. They consisted of 23 silver coins of Arakan and 56 silver coins of the Mughal Emperors of Hindustan. The Arakanese coins range in date from 1710 to 1784 A.D., and the majority of the Mughal coins were those of Shah Alam II. This hoard is probably the first discovered in Upper Burma.

SECTION VIII.—MISCELLANEOUS NOTES.

THE IDENTIFICATION OF PUSHKARANA MENTIONED IN THE SUSUNIA INSCRIPTION OF CHANDRAVARMAN.

By Mr. K. N. Dikshit.

A short inscription consisting of 3 lines written in early Gupta characters and composed of two different parts was discovered a few years ago on the surface of a rock at Susunia, a sandstone hill 12 miles to the north-west of Bankura, the headquarters of the District of the same name. Mahāmahopādhyāya Haraprasād Śāstrī published the records in *Epigraphia Indica*, Vol. XIII, p. 133. The first record purports to be the work (*kṛiti*) of the Mahārāja Śrī-Chandravarman, the son of the Mahārāja Siṁhavarman, the lord (*adhipati*) of Pushkaraṇa. Apparently, the work referred to is the cave (now destroyed) on the back wall of which the inscription and a 'discus' or chakra were engraved. The second inscription ('B') which consists of a single line, has been somewhat imperfectly read by Mahāmahopādhyāya Śāstrī, the more probable reading of which is

"Chakrasvāmino(ē) Ḍhosagrāmo=tisṛishṭaḥ"

which would mean that the village Ḍhosagrāma was made over to Chakrasvāmin. The characters of the inscriptions show the squared forms of letters and cannot be considered to be so early as the Mehrauli pillar inscription of Chandra. In editing another inscription, *viz.* the Mandasor inscription of Naravarman[1], Mr. Śāstrī has tried to identify the Chandravarman of the Susunia inscription with the Chandra of the Mehrauli pillar and the brother of Naravarman of the Mandasor inscription. He has further suggested that the Pushkaraṇa of the Susunia inscription must be identical with the town of Pokharan on the borders of Jodhpur and Jaisalmir States. Apart from the improbability of the dynasty of the Varma kings of Malwa whose inscriptions are found only in Malwa and Eastern Rajputana, having their capital Pushkaraṇa so far west, I desire to suggest the possibility of a more satisfactory identification of Pushkaraṇa of the Susunia inscription. At a distance of less than 25 miles to the north-east of Susunia is an ancient village named Pokharan on the south bank of the river Damodar. It is still a considerably large village and its antiquity is attested by the fact that the houses in several quarters of the village are built on the top of mounds, formed by the ruined heaps of older habitations, 3 to 5 feet higher than the level of the roads. In the western extremity of the village, exists a large mound called "the Rajghar" strewn over with broken bricks, pottery pieces and other antiquities. Several architectural stones are to be seen in the village, one of which measuring 2′—5″× 1′—3″ appeared to be a rough worked sandstone from the upper Damodar valley.

[1] *Ep. Ind.*, Vol. XII, p. 315.

Another stone kept in the open yard of a house shows the 'sow and ass' figure, familiar from its occurrence on land grants. There are several small tanks in the vicinity of a large tank (*pokhar* or *pushkara*) in the west of the village, and the name Pokharana or Pushkaraṇa must doubtless be ultimately due to the presence of such a tank in ancient times. It is very likely that the place dates back from the early Gupta period and can thus be considered to be the Pushkaraṇa of the Susunia inscription, the capital of King Chandravarman, son of Siṁhavarman, the extent of whose dominions may have been more or less co-terminous with the ancient Rāḍha country or south-west Bengal.

SECTION IX.—DEPARTMENTAL ROUTINE NOTES.

ANCIENT MONUMENTS PRESERVATION ACT AND LISTING OF MONUMENTS.

United Provinces—(*a*) *Hindu and Buddhist Monuments.*—Monument No. 383, Remains of a Buddhist or Jain Temple at Airwa in tehsil Bidhuna, Etawa District, was deleted from the List of Monuments in the United Provinces as it is no longer in existence.

(*b*) *Muhammadan and British Monuments.*—The Superintendent at Agra reports that agreements under the Ancient Monuments Preservation Act (VII of 1904) were executed in respect of the following privately owned monuments :—

1. Tomb of Hafiz Rahmat Khan at Bareilly.
2. Tomb of Shah Abdur Razzaq and his four sons, known as Nila Rauza, at Jhunjhana, District Muzaffarnagar.
3. Mosque at Isauli in Sultanpur District.

He also states that during the year under review three monuments, *viz.*, (1) Agra, Mabarak Manzil, (2) Bijnor, mosque and (3) Bijnor, tomb of Miran Shah Muhammad Shah at Jahanabad, were removed from the List of Monuments accepted as a Central charge.

Delhi.—In the Province of Delhi, an unknown mosque situated 200 yards to the west of Azimganj was removed from the List of Monuments as a Central charge and the following monuments were brought under the operation of the Act and added to the List of Protected Monuments maintained by the Central Government :—

1. Arab Sarai, Mauza Indarpat.
2. Delhi Gate.
3. Ajmeri Gate.
4. Kashmeri Gate and portion of the city wall on either side of the Kashmeri Gate, *i.e.*, from Mori Gate to Kashmeri Gate on one side and on the other, up to and including the water bastions at the northernmost corner of the wall, the ditch outside the city wall and both sides of the walls including alcoves, dalans, etc.
5. Nili Chhatri.
6. Lakkarwala Tomb.
7. Sunderwala Burj.
8. Sunderwala Mahal.

Punjab.—Among the Muhammadan monuments in the Punjab, the Superintendent of the Frontier Circle reports that only one monument has been recommended for protection under the Act, *i.e.*, the Mughal Bridge over the

Buddhiawala Nala in the Gurgaon District. Tea Kos minars—three pairs in the Amritsar District, 2 in the Rawalpindi District and 2 in the Lahore District —have been removed from the List of Central Protected Monuments. In order to ensure proper protection and maintenance, agreements were made with the owners of Shamsher Khan's tomb at Batala and the Bab-i-Faiz Gate at Panipat. As the owners of the tomb of Abad-u-Nabi at Kotli Maqbara in the District of Gujranwala were minors, no agreement could be executed. A request has been made to the local Government to take necessary steps to appoint guardians, to facilitate the execution of an agreement. In spite of all possible efforts the owners of the monuments at Multan and Hissar have expressed their unwillingness to enter into an agreement with the Government. This is particularly to be regretted as some of the buildings are of exceptional interest from an archæological point of view.

North-West Frontier Province and Baluchistan.—In all three monuments in Baluchistan, *viz.*, the Tor Dheri site and the Great mound at Dabarkot in the Duki tehsil and a pre-historic mound near Harian Haidorzai in the Sinjawai tehsil, were brought under the operation of the Act.

No prosecution for wilful damage to ancient monuments occurred during the year, but it is regretted that some were disfigured by visitors who scribbled their names on them. As stated in previous reports, the traffic in Gandhāra sculptures seems to continue unabated. These sculptures generally come from the Independent Territory where the Ancient Monuments Preservation Act does not operate.

Bombay Presidency including Sind.—In the Western Circle, eleven monuments were added to the List of Protected Monuments, *viz.,* 3 each in Ahmednagar and Bijapur districts, 2 each in Nawabshah and Panch Mahals districts and one in the Ahmedabad district. Preliminary notifications of protection of two monuments, namely, one in the Panch Mahals and another in the East Khandesh districts were issued by the local Government under the Act. Changes in the sub-classifications of three monuments in the Panch Mahals and one in the East Khandesh districts were made by the issue of fresh notifications. In the Ahmedabad district preliminary notifications in respect of four monuments issued previously could not be confirmed in time. On the advice of the Legal Remembrancer the original notifications had to be re-issued and confirmed during the year. Similar action was taken in the matter of a monument in the Thar and Parkar district, and rules under Section 20 of the Act were also framed to regulate excavations in the site near the Buddhist stūpa at Mirpurkhas which is a protected monument.

Five persons were prosecuted for removing stones from Iklash Khan Masjid at Bijapur and fined one rupee each by the City Magistrate. A contractor employed by the District Local Board of Kolaba engaged in erecting a *dharmasala* at Raigadh removed bricks from a protected minar near the Gangasagar tank situated on the top of the hill-fort of Raigadh and was fined by the Magistrate a sum of rupees eight hundred, the estimated cost of rebuilding the portion of the minar.

A complete list of ancient monuments protected under the Ancient Monuments Preservation Act has been drawn up and submitted to the Director-General.

Bihar and Orissa.—The Archæological Department intimated to the local Government that the Begu Hajjam Mosque in Patna City was not of such archæological and architectural value as would justify its maintenance from Central Revenues, in view of the prior claims of many more important monuments which were urgently in need of repairs. The mosque was, therefore, removed from the List of Protected Monuments maintained by the Central Government and the local Government issued a notification to that effect in May 1927.

The owners of the Shergarh Fort at Sassaram in the Shahabad District having refused to enter into an agreement under Section 5 of the Ancient Monuments Preservation Act, the monument was transferred under the Devolution Rules to the local Government who accepted its maintenance in a notification issued in June 1927. Its companion fort of Rohtasgarh associated, like it, with the exploits of the famous Sher Shah Suri, is being maintained by the Archæological Department from Central Revenues.

Both the List of Ancient Monuments in Bihar and Orissa and the Antiquarian Maps of that Province, which have been under reference in previous reports, are now in the press.

Central Provinces.—A notification under Section 3 (3) of the Ancient Monuments Preservation Act confirming the protection of all that remains of the circumvallation of the Maratha Fort at Pauni, in the Bhandara District, was issued by the local Government in September 1927. A reference to the provisional notification of this monument is contained in the last report, and a brief description of the monument itself appears in the present report under "Section I—Conservation."

Intimation has been conveyed to the local Government that the Archæological Department will not in future maintain the Panch Matha group of temples at Garha, in the Jubbulpur District, in view of the failure of the owner to carry out the terms of an agreement made under Section 5 of the Ancient Monuments Preservation Act, and the relatively small importance of this monument archæologically. It now rests with the local Government to decide whether they will maintain the monument or not.

On the recommendation of the Archæological Department steps have been taken by the local Government to cancel the agreement made with the owner for the maintenance of the Temple of a Devi at Dhamagaon in the Betul district as a protected monument, as on its initial inspection by an Archæological Officer the temple has been found to be a small modern structure devoid of archæological interest. After the cancellation of the agreement the notification of protection will be withdrawn.

Bengal.—In Bengal five monuments, *viz.*, (1-2) Patpur temple and stone chariot at Vishnupur, District Bankura, (3-4) the minar and the mosque at Pandua, District Hooghly and (5) five mounds at Birat, District Rangpur, were

added to the list of protected monuments during the year under report. The notifications of protection have been rescinded in respect of the following monuments :—

1. Kidderpur Fort at Hajiganj near Narayanganj, District Dacca.
2. Mosque at Mauzampur, District Dacca.
3. The monuments of Shah Jalal Tabrizi at Pandua, District Malda.

Besides these, under the Devolution Rules, the following ancient monuments were removed from the list of those maintained by the Central Government :—

1. Hammam at Lalbagh, District Dacca.
2. Math at Manipur, District Dacca.
3. Gazgir mound at Ashrafpur, District Dacca.
4. Tablet in memory of the poet Michael Madhusudan Dutt at Sagardari, District Jessore.

The Government of India have decided that notifications of protection issued by local Governments under the Ancient Monuments Preservation Act (VII of 1904) in respect of monuments transferred to the Ecclesiastical Department for maintenance in 1926-27 should not be rescinded, but should be allowed to remain in force.

Assam.—In Assam the following was decalred protected under the Ancient Monuments Preservation Act :—

1. Three stones at Harupani, District Sibsagar, namely that known as "The King of Assam's hand basin," an oblong troughed stone and an upright slab together with the remains of the wall that encloses them.

PUBLICATIONS.

The following publications were issued by the Department during the year 1927-28 :—

1. *Annual Report of the Archæological Survey of India* for 1924-25, edited by J. F. Blakiston.
2. *Annual Progress Report of the Assistant Archæological Superintendent for Epigraphy, Southern Circle,* for the year ending 31st March 1926, by G. Venkoba Rao.
3. *Antiquities of Indian Tibet,* Pt. II, by A. H. Francke.
4. *The Chalukyan Architecture of the Kanarese Districts,* by H. Cousens.
5. Memoir No. 30.—*The Beginnings of Art in Eastern India with special reference to Sculptures in the Indian Museum, Calcutta,* by Rai Bahadur Ramaprasad Chanda.
6. Memoir No. 32.—*The Fragment of a Prajñāpāramitā MS. from Central Asia,* by B. B. Bidyabinod.
7. *Guide to the Qutb, Delhi,* by J. A. Page.
8. *Epigraphia Indica,* edited by Hirananda Sastri :—
   Vol. XVII, Pt. 8.
   Vol. XIX, Pt. 1.
9. *Epigraphia Indo-Moslemica* for 1923-24, edited by G. Yazdani.

PHOTOGRAPHS.

Director General of Archæology.—During the year under review, 965 negatives were prepared in the office of the Director General of Archæology and prints of these were mounted in the albums of the Simla Office and in those of the Museums at Taxila and Mohenjo-daro. Five hundred and fourteen negatives were prepared in connection with the excavations at Mohenjo-daro, 243 at Taxila, 101 at Jhukar, the remainder being principally of antiquities from Waziristan, Baluchistan, Kosam and Bilsar.

Prints numbering 2,321 were received from the provincial officers for record in the central collection at Simla. Three hundred and forty photographs were supplied to the public and a sum of Rs. 442-13-0 realized thereby.

Northern Circle, Agra.—One hundred and sixteen negatives were made in the office of the Superintendent, Muhammadan and British Monuments, Agra, principally in connection with ancient monuments at Agra, Fathpur Sikri, Jagner, Delhi, Deogarh, Kanauj and Khajuha, twenty of exhibits in the Delhi Museum and 38 of the measured drawings of certain monuments at Delhi and Agra. Photographs to the value of Rs. 231-11-0 were supplied to private persons.

Northern Circle, Lahore.—Altogether 280 negatives were prepared in the office of the Superintendent, Hindu and Buddhist Monuments, Northern Circle, Lahore. Of these 164 related to excavations at Harappa, and 54 to monuments in the Salt Range, Deogarh, Sarnath and Kalanjar Fort. Thirty-one inferior negatives of antiquities in the Sarnath Museum were replaced by new ones. Fifteen enlargements were made for the Archæological Exhibition held at Simla and 100 prints were sold realizing Rs. 135-8-0.

Frontier Circle.—In the office of the Superintendent, Archæological Survey, Frontier Circle, 113 negatives were prepared. Of these 37 were of sculptures in the Guides Mess. Mardan, 32 of Nāl antiquities, 16 of the Sikri Stūpa in the Lahore Museum, the remaining 28 being of monuments inspected during the year.

Photographic prints to the value of Rs. 96-12-0 were sold to private persons, the greater part of them having been supplied to foreign visitors or archæologists in Europe and America. Ten photographs of monuments in Lahore were supplied gratis to the Director, Public Information, Home Department, Government of India.

Western Circle.—The office of the Superintendent, Archæological Survey, Western Circle, prepared 179 new negatives from which 947 prints were made. Of these 44 were sold to the public, realizing Rs. 74-1-0 and the rest supplied to the Director General of Archæology in India or used for official purposes.

Central Circle.—Of the 292 photographs taken in the Central Circle, 238 were of monuments in Bihar and Orissa, the remaining 54 being of monuments in the Central Provinces. Among the former the more important were those of the Maurya remains exposed in the recent excavations at Bulandibagh near Patna, of the Pāla remains at Nalanda and of minor antiquities recovered at this site and now housed in the Museum there. In the Central Provinces photographs were taken of monumental remains, as well as of the Rock Edict of Aśoka at Rupnath in the Jubbulpore District.

Seventy-six photographic prints were sold to the public realizing Rs. 56-6-0, and 118 were supplied to offices of the Archæological Department.

Estampages of 32 inscriptions, 31 occurring on minor antiquities recovered at Nalanda and one from the Central Provinces, were made and sent to the Government Epigraphist for decipherment.

Eastern Circle.—The number of photo-negatives added to the collection of the Superintendent, Archæological Survey, Eastern Circle, Calcutta, was 503 in all. The complete photographic record of the Paharpur temple and other excavated remains at the same site, showing the monuments at all stages of excavation and repair, details of the sculptures and terracotta plaques and the other antiquities now comprises 1,023 negatives, of which 342 were added during the year. The negatives also include those made in connection with a remarkable collection of bronze images and a miniature shrine, discovered as Treasure Trove in the Chittagong District.

Photographic prints to the value of Rs. 44-10-0 were sold to private persons.

Southern Circle.—In the office of the Superintendent, Archæological Survey, Southern Circle, 81 negatives were prepared and listed. Seventeen applications for photographic prints were received during the year and 200 prints were prepared and sold, realizing Rs. 205-4-0. The photo-albums are up to date and in good order and a number of visitors, mostly educational officers, availed themselves of the opportunity of inspecting these valuable records. Prints numbering 389 were supplied to the Director General of Archæology, the local Government and to officers of the Department.

Burma Circle.—One hundred and sixty-one photographs were added to the list in the office of the Superintendent, Archæological Survey, Burma. These were principally of mounds at Pagan and Hmawza and the remains and antiquities brought to light in the course of their excavation. Photographic prints realizing Rs. 22-0-0 were sold to private persons.

Indian Museum.—In the Archæological Section of the Indian Museum, 231 photographic negatives were prepared and prints to the value of Rs. 13-6-0 purchased by the public.

Drawings.

Director General of Archæology.—Eight plans were prepared of the excavations at Taxila, one of the Mughal gardens at Wah, two of the excavations at Mohenjo-daro, and one of those at Jhukar in the Larkana District of Sind.

Northern Circle, Agra.—The Superintendent at Agra reports that the survey of ancient monuments at Delhi is in progress. The two temporary draftsmen with the help of the Head Draftsman prepared 23 measured drawings in pencil, of which nine have been inked in. The Assistant Draftsman at headquarters prepared plans of the Jāmi' Masjid at Agra and also several working drawings required for the principal conservation works.

Northern Circle, Lahore.—The two draftsmen attached to the office of the Superintendent, Hindu and Buddhist Monuments, prepared 6 drawings of the

excavations at Harappa and a rough sketch of the platforms at Khabakki in the Shahpur district of the Salt Range. Plans were also prepared of the structures discovered in the extension of pits I and II on mound AB and in trenches I and III on mound F at Harappa and incorporated in the old drawings.

Frontier Circle.—Twenty-seven drawings were prepared, out of which 9 relate to the conservation works carried on in the Lahore Fort and two to the Nāl pottery. The rest illustrate the various conservation measures proposed to be undertaken at different monuments in the Punjab and North-West Frontier Province.

Western Circle.—In the Western Circle, besides several working plans required for conservation works, three new drawings—two of the Hindu temple at Mulgaon and one of Jogeshwari—were added to the existing list of measured drawings. Estampages of fourteen inscriptions were also taken during the year.

Central Circle.—The Superintendent reports that the drawings made during 1927-28 were mostly of the excavated remains at Nalanda in the Patna District of Bihar, where a plan and cross sections were made of Monastery Site No. 6 and an elevational drawing of Stūpa Site No. 3. The remains of the newly exposed N-W corner tower of this stūpa were also recorded in plan and section and sectional drawings of the exploratory pits sunk in Monastery Sites Nos. 7, 8, 9 and 10 were made; a similar drawing was also being prepared of a pit sunk through to the earlier levels below the Devapala structure in the west verandah of Monastery Site No. 1.

A diagrammatic plan of the Nalanda site so far as excavated, showing the continuous range of monasteries on the east, the detached stūpas on the west, and the connecting monasteries on the south, was also prepared for the Archæological Exhibition held at Simla in September 1927.

Eastern Circle.—Owing to the death of the permanent draftsman in March 1928 the drawings of the Paharpur excavations could not be taken in hand till a successor was appointed in May 1928. Five drawings were prepared in connection with the excavations which included the plan and sections of the main temple at Paharpur and plans of the areas excavated near the north gate buildings and the bathing platform near the southern rampart wall.

Southern Circle.—During the year under report 12 drawings were prepared and a few plans and tracings made for office record.

Burma Circle.—Nineteen drawings were prepared during the year. They consisted of plans and sections of the buildings excavated at Pagan and Hmawza.

PERSONNEL.

Sir John Marshall continued as Director General of Archæology, Mr. J. F. Blakiston as Deputy Director General of Archæology, R. B. Daya Ram Sahni as Deputy Director General for Exploration and Mr. E. J. H. Mackay as Assistant Superintendent for Exploration. Mr. N. G. Majumdar was appointed Assistant Superintendent for Exploration with effect from the 18th June 1927 and Dr. Mohammad Abdul Hamid, Assistant Archæological Chemist on the 20th June 1927 and atta-

-ched to the Office of the Archæological Chemist in India, while Mr. H. H. Khan held the post of the second Leave Reservist from the 1st June 1927, being posted as Assistant Superintendent, Archæological Survey, Western Circle.

Mr. G. C. Chandra was confirmed in his appointment as Superintendent, Archæological Survey, Western Circle, with effect from the 23rd November 1927. Mr. H. Hargreaves, Superintendent, Archæological Survey, Frontier Circle, proceeded on leave for 10 months and 11 days from the 25th November 1927 and Khan Bahadur Mian Wasi-ud-Din, who was appointed as Assistant Superintendent, *vice* Mr. G. C. Chandra, as a temporary measure, was appointed to officiate as Superintendent, Archæological Survey, Frontier Circle, *vice* Mr. Hargreaves. Mr. Mohammad Sana Ullah, Archæological Chemist, was granted two months' leave on average pay from 14th September 1927 and Dr. Mohammad Abdul Hamid, Assistant Archæological Chemist, held charge of the current duties of the former in addition to his own during this period. There were no changes in the officer personnel of the Burma, Northern (Agra and Lahore), Eastern and Central Circles, Indian Museum and Epigraphical Branch of the Department. Mons. C. Duroiselle was granted one year's extension of service with effect from the 25th June 1928 and Mr. Venkoba Rao was permitted to retire with effect from the 16th May 1928.

SCHOLARSHIPS.

The three scholarships for Sanskrit, Persian and Arabic and Architecture awarded in 1926 to Messrs. Hargovind Lal Srivastava, M.A., Q. M. Moneer, B.A., and Shib Charan Mukherji, B.A., respectively, were extended for a period of one year.

APPENDIX I.

List of exhibits other than coins acquired for the Indian Museum, Archæological Section, during the year 1927-28.

PURCHASED.

1. *(6880)*.—Plaster cast of the inscribed Mathura Lion Capital now in the British Museum.

2. *(6675)*.—Chlorite figure of Vajrasattva. From Salempur, Balasore. 1′ ½″×6½″.

3. *(6682)*.—Bodhisattva Avalokiteśvara of chlorite. From Chauduar, Cuttack. 1′ 10½″×11″.

4. *(6953)*.—Standing figure of Vajrapāṇi. From Kendrapara, Cuttack. 6′ 10″×3′ 1″.

5. *(6954)*.—Stone image of standing Bodhisattva. From Kendrapara, Cuttack. 6′ 10″×2′ 11″.

6. *(6955)*.—Stone figure holding a vajra and a staff. From Kendrapara, Cuttack. 1′ 4″×5½″.

7. *(6956)*.—Image of four-armed seated Tārā. From Kendrapara, Cuttack. 3′ 3″×3′ 1″.

8. *(6957)*.—Stone image of Mārīchi with eight arms. From Kendrapara, Cuttack. 3′ 6″×1′ 10″.

9. *(6958)*.—Stone image of two-armed Avalokiteśvara. From Kendrapara, Cuttack. 4′×2′ 2″.

10. *(6948)*.—Inscribed slab with three figures. From Paharia mound, Benares.

11. *(6949)*.—Stone figure of Sūrya (Sun-god). From Purani Maṭh, Benares. 4′ 6″×2′ 5″.

12. *(6950)*.—Door jamb with the figure of Yamunā. From Purani Maṭh, Benares. 4′ 5½″×1′ 3½″×11½″.

13. *(6951)*.—Door jamb with the figure of Gaṅgā. From Purani Maṭh, Benares. 4′ 6½″×1′ 3½″×1′ 1″.

14. *(6952)*.—Door lintel with three niches. From Purani Maṭh, Benares. 4′ 10″×1′ 2″×10½″.

15. *(6683)*.—Upper half of a stone figure of eight-armed Mahishamardinī. From Rajgir. 1′ 10″×10″.

16. *(6941)*.—Persian inscription of the time of Muhammad Shah, dated 1191 A. H. From Dacca, Bengal. 2′ 3″×1′ 2¾″.

17-18. *(6882-83)*.—Bronze images of a male deity holding a lotus in the left hand. From Negapatam, District Tanjore, Madras Presidency. Ht. 6″ and 4½″.

19-55. *(6884-6920)*.—Bronze images of standing Buddha with one hand in *abhaya-mudrā.* From Negapatam, District Tanjore, Madras Presidency. Ht. varying from 16¼″ to 4⅝″. See *e.g.*, Pl. XXXVIII, fig. 1.

56-62. *(6921-27)*.—Bronze images of Buddha seated touching earth. From Negapatam, District Tanjore, Madras Presidency. Ht. varying from 6⅝″ to 3⅜″. See *e.g.*, Pl. XXXVIII, fig. 3.

63-75. *(6928-40)*.—Bronze images of Buddha seated in meditation. From Negapatam, District Tanjore, Madras Presidency. Ht. varying from 6½″ to 2½″. See *e.g.*, Pl. XXXVIII, fig. 2.

RECEIVED IN EXCHANGE.

76-169. *(6783-6876)*.—Neolithic stone implements from America received in exchange from the Smithsonian Institution.

APPENDIX I—*contd.*

PREPARED.

170-171. (*6959-60*).—Casts of heads of stone figures in the Sarnath Museum.

On loan from the Director General of Archæology in India.

172. (*6945*).—Carved pink topaz. Standing figure of Rāma with bow and arrows mounted on gold. 1⅞″×1″. Pl. XXXVII, fig. 13.

173. (*6946*).—Carved sapphire figure of seated Rāma with Sītā on his left knee. Lakshmana standing to the right holding *chouri* in the left hand; Hanumāna and another monkey crouching at the feet of Rāma; mounted in gold enamelled frame. 1½″×1″. Pl. XXVII, fig. 12.

174. (*6949*).—Carved labri (spinal) figure of Vishnu standing with his right foot resting on the back of Garuḍa mounted on ruby stand. 1″×7/12″.

175. (*6961*).—Red stone celt with an inscription in Brāhmī characters. From District Banda. 6¾″×4½″.

176. (*6961-A*).—Emerald cup (Mughal). Pl. XXXVII, fig. 11.

177. (*6961-B*).—Emerald bow-ring (Mughal). Pl. XXXVII, fig. 14.

PRESENTATIONS.

Presented by Babu Krishna Chandra Mangaraj of Chauduar.

178. (*6676*).—Lower half of an image of chlorite. From Chauduar, District Cuttack Orissa. 11″×9½″.

179. (*6677*).—Chlorite image of Nairrita, the guardian deity of the south-west. From Chauduar, District Cuttack, Orissa. 10½″×6¼″.

180. (*6678*).—Chlorite image of a female without head. From Chauduar, District Cuttack Orissa. 5½″×5″.

181. (*6679*).—Chlorite torso of a male figure wearing a garland of heads and holding a cup in left hand. From Chauduar, District Cuttack, Orissa. 5½″×4¼″.

182. (*6680*).—Chlorite head of a demon. From Chauduar, District Cuttack, Orissa. 6″×5″.

183. (*6681*).—Inscribed bronze mask of Buddha. From Chauduar, District Cuttack Orissa. 7″×4¼″.

Presented by the British Museum.

184-217. (*6684-6717*).—Fragments of vessels and other objects of glass. From Samarra.

218-236. (*6718-6736*).—Fragments of glass mosaic and porcelain. From Samarra.

237-282. (*6737-6782*).—Fragments of pottery. From Samarra.

Presented by J. C. Shoyer, Esqr., Rakha Mines.

283. (*6877*).—Earthenware *chatti* which contained coins. From Chota Nagpur.

Presented by Dr. U. N. Brahmachari, Calcutta.

284-285. (*6878-6879*).—Neolithic stone implements. From Jamalpur, Bihar.

Presented by the Maharaja of Mayurbhanj.

286. (*6881*).—Stone figure of Nāginī. From Khiching, Mayurbhanj, Orissa.

APPENDIX I—*contd.*

Presented by Babu Sripati Jena.

287. (*6942*).—Stone figure of Avalokiteśvara. From Ratnagiri, District Cuttack, Orissa. 1′ 7½″×1′ 1½″.

288. (*6944*).—Fragment of a stone inscription. From Ratnagiri, District Cuttack, Orissa.

Presented by Babu Hari Ballabh Das of Jajpur through Babu Parvati Charan Rai.

289. (*6943*).—Stone image of seated Vaiśravaṇa. From Udayagiri, District Cuttack, Orissa. 2′ 5¾″×1′ 6″.

List of coins acquired for the Indian Museum, Archæological Section, during the year 1927-28.

1. Non-Muhammadan.

Ruler's name.	Dynasty.	Gold.	Silver.	Copper.	Total.	References.
....	Achæmenian	Double-daric 1	..	..	1	Purchased. See Pl. XXXVII, fig. 10.
(Issued after the death of Alexander the Great.)	Macedonian	..	Deca-drachm 1	..	1	Purchased. See Pl. XXXVII, fig. 9.
Euthydemus I	Bactrian	1	..	..	1	Purchased. See Pl. XXXVII, fig. 8.
Kanishka	Kushān	..	..	11	11	Presented by the Maharaja of Mayurbhanj.
Huvishka	Do.	..	..	7	7	Do.
....	Do.	..	..	7	7	Presented by Mr J. C. Shoyer of Rakha Mines, Dalbhum.
Dāmasena, *M.K.*	W. Kshatrapa	..	1	..	1	Presented by the Director of Industries, C. P., Nagpur.
Vīradāman, *K.*	Do.	..	1	..	1	Do.
Vijayasena, *M.K.*	Do.	..	4	..	4	Do.
Dāmajada-śri, *M.K.*	Do.	..	1	..	1	Do.
Rudrasena, *M.K.*	Do.	..	2	..	2	Do.
Viśvasiṁha, *K.*	Do.	..	1	..	1	Do.
Do. *M.K.*	Do.	..	1	..	1	Do.
Bhartṛidāman, *K.*	Do.	..	1	..	1	Do.
Do. *M.K.*	Do.	..	3	..	3	Do.
Viśvasena, *K.*	Do.	..	7	..	7	Do.
Rudrasiṁha II, *K.*	Do.	..	2	..	2	Do.
Yaśodāman II, *K.*	Do.	..	1	..	1	Do.
Anantavarma Choḍa-gaṅga	South Indian (Kalingan).	10	..	..	10	Presented by Rai Sahib Basudev Misra of Sambalpur.
Do.	Do.	8	..	..	8	Purchased.
....	South Indian (Padmaṭaṅka).	1	..	..	1	Presented by the Madras Museum.
....	South Indian (Fanam).	10	..	..	10	Do.
....	Dutch, E. I Co.	..	..	2	2	Do.
	Total. (Non-Muhammadan)	31	26	27	84	

APPENDIX I—*contd.*

List of coins acquired for the Indian Museum, Archæological Section, during the year 1927-28—contd.

II. MUHAMMADAN.

Ruler's name.	Dynasty.	Gold.	Silver.	Copper.	Total.	References.
Firoz Shah II	Tughlaq	..	..	1	1	Presented by the Marwar State, Jodhpur.
Tajuddin Firoz	Bahmani	..	1	..	1	Presented by J. C. Shoyer, Esqr., Rakha Mines, Dalbhum.
Ahmad Shah	Do.	..	1	..	1	Do.
Husen Shah	Jaunpur	..	..	1	1	Presented by the Marwar State, Jodhpur.
Ahmad Shah	Gujrat	..	..	1	1	Presented by the Prince of Wales Museum, Bombay.
Mahmud I	Do.	..	..	2	2	Do.
Muzaffar II	Do.	..	..	1	1	Do.
Bahadur Shah	Do.	..	..	2	2	Do.
Ghiyas Shah	Malwa	..	..	2	2	Presented by the Marwar State, Jodhpur.
A fragment	Do.	..	..	1	1	Do.
Akbar	Mughal	..	1	..	1	Presented by the U. P. Government.
Do.	Do.	..	..	30	30	Presented by the Punjab Government.
Shah Jahan	Do.	..	4	..	4	Presented by the Director of Industries, C. P.
Do.	Do.	..	2	..	2	Presented by the U. P. Government.
Aurangzeb	Do.	..	2	..	2	Presented by the Director of Industries, C. P.
Do.	Do.	..	3	..	3	Presented by the Punjab Govt.
Do.	Do.	..	2	..	2	Presented by the U. P. Government.
Do.	Do.	..	10	..	10	Presented by the Bihar and Orissa Coin Committee.
Furrukhsiyar	Do.	..	1	..	1	Presented by the U. P. Government.
Muhammad Shah	Do.	..	6	..	6	Do.
Do.	Do.	..	1	..	1	Presented by the Director of Industries, C. P.
Do.	Do.	..	9	..	9	Presented by the Punjab Govt.
Alamgir II	Do.	..	2	..	2	Do.

APPENDIX I—*contd.*

List of coins acquired for the Indian Museum, Archæological Section, during the year 1927-28—contd.

II. MUHAMMADAN—*contd.*

Ruler's name.	Dynasty.	Gold.	Silver.	Copper.	Total.	References.
Alamgir II	Mughal . . .	..	3	..	3	Presented by the Bihar and Orissa Coin Committee.
Do.	Do. . . .	..	2	..	2	Presented by the U. P. Government.
Shah Alam II	Do. . . .	..	9	..	9	Do.
Sultan Mahmud	Gaznavid . .	1	..	..	1	Purchased.
Mahmud Shah	Jaunpur . .	1	..	..	1	Do.
Akbar	Mughal . . .	..	6	..	6	Do.
Shah Jahan	Do. . . .	..	1	..	1	Do.
	(MUHAMMADAN) TOTAL	2	66	41	109	
	GRAND TOTAL .	33	92	68	193	

List of exhibits other than coins acquired for the Delhi Fort Museum during the year 1927-28.

1. An inscribed marble stone (22″×21″) taken out of a well about 10 yards to the north of the Hammam in the Delhi Fort.

PRESENTATIONS.

Presented by Miss M. Austin Smith of Simla.

2. Two volumes of the Illustrated London News of 1857 and 1858.

On loan from the Director General of Archæology in India.

3. Picture of the Diwan-i-Khas, Delhi Fort.
4. Picture of the Interior of the Diwan-i-Khas, Delhi Fort, with the Peacock Throne of Akbar Shah II.
5. Portrait of Lord Clive.
6. Portrait of Major General Sir Henry Havelock, K.C.B.
7. Portrait of General Lord W. H. Bentinck, Governor General of India.
8. Picture of Mausoleum of Makhdoom Shah Daulat at Maner on the river Son.
9. Picture of Mausoleum of the Ranee, wife of the Emperor Jahangir near Allahabad.
10. Print of Jaunpur Mosque.
11. An old print of a palanquin cover.
12. An old embroidered *Kamarband.*
13. The same.
14. The same.
15. The same.
16. The same.
17. The same.
18. The same.
19. An inscribed Astrolabe.

APPENDIX I—*contd.*

List of coins acquired for the Delhi Fort Museum during the year 1927-28.

Ruler's name.	Dynasty.	Gold.	Silver.	Copper.	Total.	References.
Shahjahan	Mughal . . .	..	5	..	5	Presented by the Government of the United Provinces.
Alamgir II	Do.	..	3	..	3	Do.
Shah Alam II . . .	Do.	..	48	..	48	Do.
Akbar Shah II . . .	Do.	..	16	..	16	Do.
Sher Shah	Suri	..	2	..	2	Do.
Islam Shah	Do.	..	1	..	1	Do.
Ahmad Shah Durrani . .	Durrani . . .	..	1	..	1	Do.
Akbar	Mughal . . .	..	1	..	1	Presented by the Director of Industries, C. P.
Shahjahan	Do.	..	7	..	7	Do.
Aurangzeb	Do.	..	8	..	8	Do.
Shah Alam Bahadur I . .	Do.	..	1	..	1	Do.
Muhammad Shah . . .	Do.	..	1	..	1	Do.
Akbar	Do.	..	..	28	28	Presented by the Government of the Punjab.
Aurangzeb	Do.	..	3	..	3	Do.
Farrukhsiyar	Do.	..	1	..	1	Do.
Muhammad Shah . . .	Do.	..	26	..	26	Do.
Ahmad Shah Bahadur . .	Do.	..	4	..	4	Do.
Alamgir II	Do.	..	1	..	1	Do.
Mahmud Shah I . . .	King of Gujrat .	..	..	1	1	Presented by the Prince of Wales Museum of Western India.
Aurangzeb	Mughal . . .	..	10	..	10	Presented by the Bihar and Orissa Coin Committee.
Shah Alam Bahadur I . .	Do.	..	1	..	1	Do.
Farrukhsiyar	Do.	..	1	..	1	Do.
Alamgir II	Do.	..	8	..	8	Do.
Mahmud Ghazni . . .	Ghaznavid . .	..	1	..	1	Lent by the Director General of Archæology.
Nasiru-d-Din Mahmud . .	Slave	1	..	..	1	Do.
Alaud-d-Din Masud Shah .	Do.	1	..	..	1	Do.
Alaud-d-Din Mohd. Shah. .	Khalji	..	1	..	1	Do.
Shah Rukh	Mughal . . .	..	1	..	1	Do.
Akbar	Do.	2	..	..	2	Do.
Jahangir	Do.	1	..	..	1	Do.
Shahjahan	Do.	1	1	..	2	Do.

APPENDIX I—*contd.*

List of coins acquired for the Delhi Fort Museum during the year 1927-28—contd.

Ruler's name.	Dynasty.	Gold.	Silver.	Copper.	Total.	References.
Aurangzeb	Mughal	6	5	..	11	Lent by the Director General of Archæology.
Shah Alam Bahadur I	Do.	1	..	..	1	Do.
Farrukhsiyar	Do.	3	2	..	5	Do.
Muhammad Shah	Do.	5	3	..	8	Do.
Ahmad Shah Bahadur	Do.	2	3	..	5	Do.
Alamgir II	Do.	2	..	..	2	Do.
Shah Alam II	Do.	1	3	..	4	Do.
Bahadur Shah	Sultan of Bengal	..	1	..	1	Do.
Jalalu-d-Din Md. Shah	Do.	..	1	..	1	Do.
Ghaziu-d-Din Haidar	King of Oudh	..	6	..	6	Do.
Naziru-d-Din Haidar	Do.	1	1	..	2	Do.
Muhammad Ali Shah	Do.	1	..	..	1	Do.
Wajid Ali Shah	Do.	1	..	..	1	Do.
	TOTAL	29	178	29	236	

APPENDIX II.

Additions to Departmental Libraries.

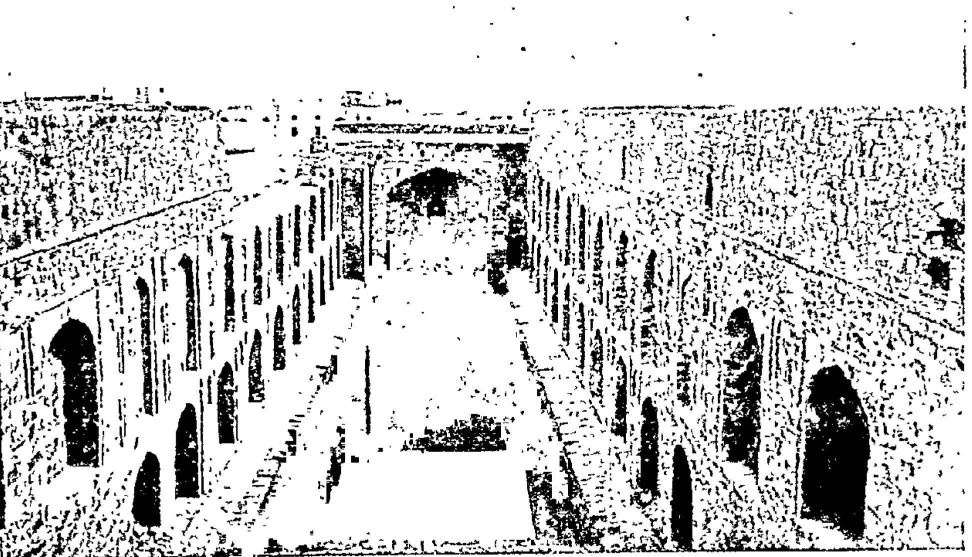
Name of office.	Books purchased.	Books presented.	Total.	REMARKS.
Director General	135	270	425	
Northern Circle—				
Muhammadan and British Monuments	14	21	35	
Hindu and Buddhist Monuments	35	34	69	
Frontier Circle	13	27	40	
Western Circle	30	36	66	
Central Circle	21	18	39	
Eastern Circle	36	37	73	
Southern Circle	15	37	52	
Burma Circle	57	79	136	Includes 32 books presented by the Siamese Government.
Government Epigraphist	135	109	244	Includes 27 maps purchased and 33 books transferred from the Southern Circle Office.
Assistant Archæological Superintendent for Epigraphy, Southern Circle.	67	50	117	Includes 12 books received in exchange.
Archæological Chemist	21	6	27	
Archæological Section, Indian Museum	56	76	132	



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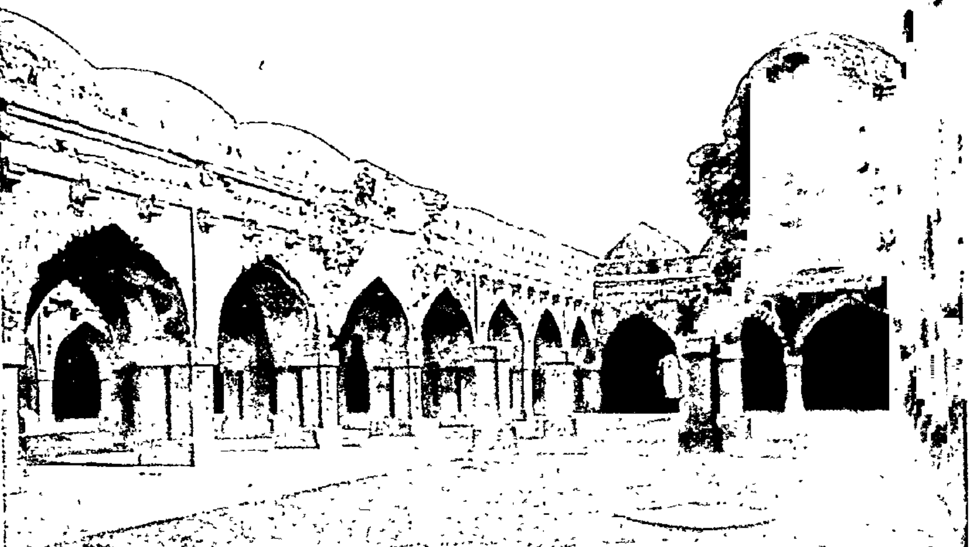
(*a*) UGARSEN'S BAOLI, FROM SOUTH, BEFORE CONSERVATION.



(*b*) UGARSEN'S BAOLI, FROM SOUTH, AFTER CONSERVATION.



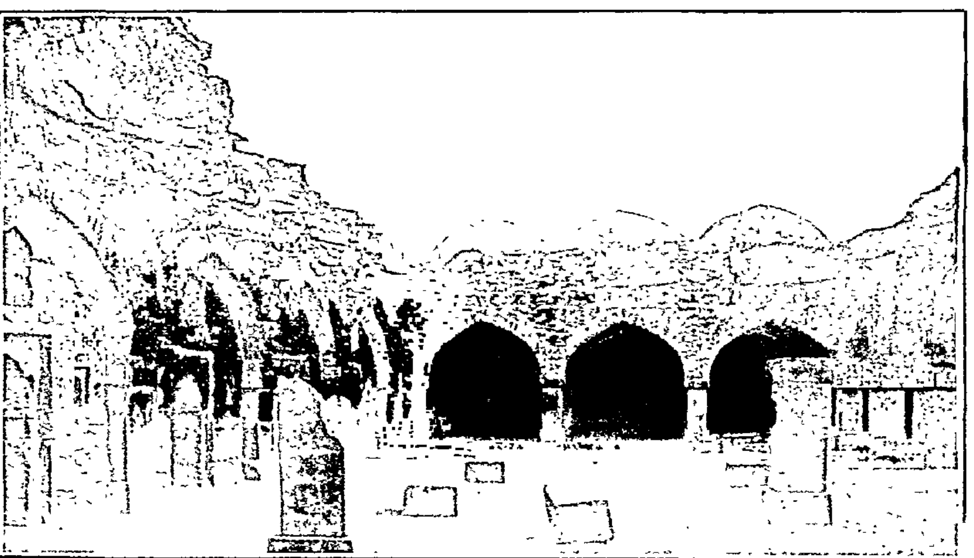
(*c*) KALI OR SANJAR MASJID AT NIZAMUDDIN. GENERAL VIEW OF FIRST COURTYARD, BEFORE CONSERVATION.



(*d*) KALI OR SANJAR MASJID AT NIZAMUDDIN. GENERAL VIEW OF FIRST COURTYARD, AFTER CONSERVATION.



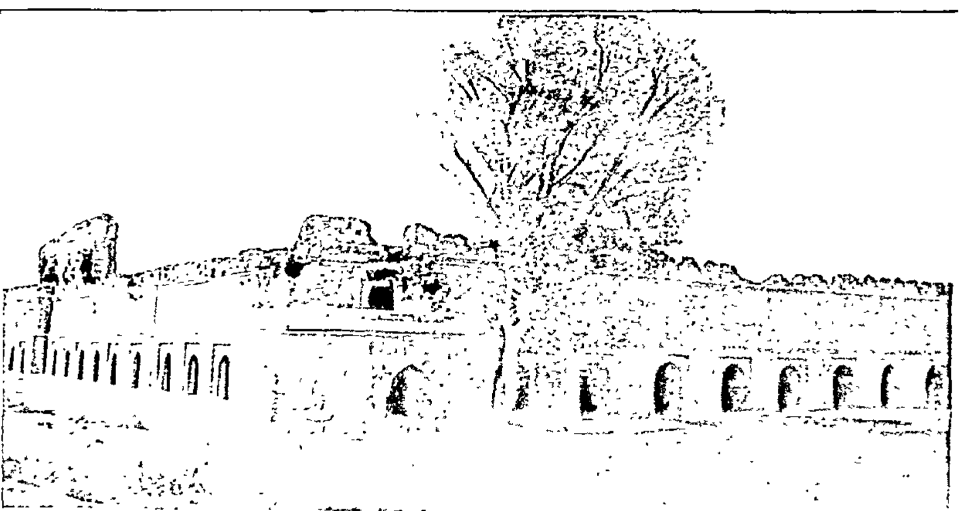
(*a*) KALI OR SANJAR MASJID AT NIZAMUDDIN. GENERAL VIEW OF PRAYER CHAMBER, BEFORE CONSERVATION.



(*b*) KALI OR SANJAR MASJID AT NIZAMUDDIN. GENERAL VIEW OF PRAYER CHAMBER, AFTER CONSERVATION.



(*c*) SIKANDAR SHAH LODI'S TOMB AT KHAIRPUR. SOUTH-WEST BASTION OF THE ENCLOSURE, BEFORE CONSERVATION.



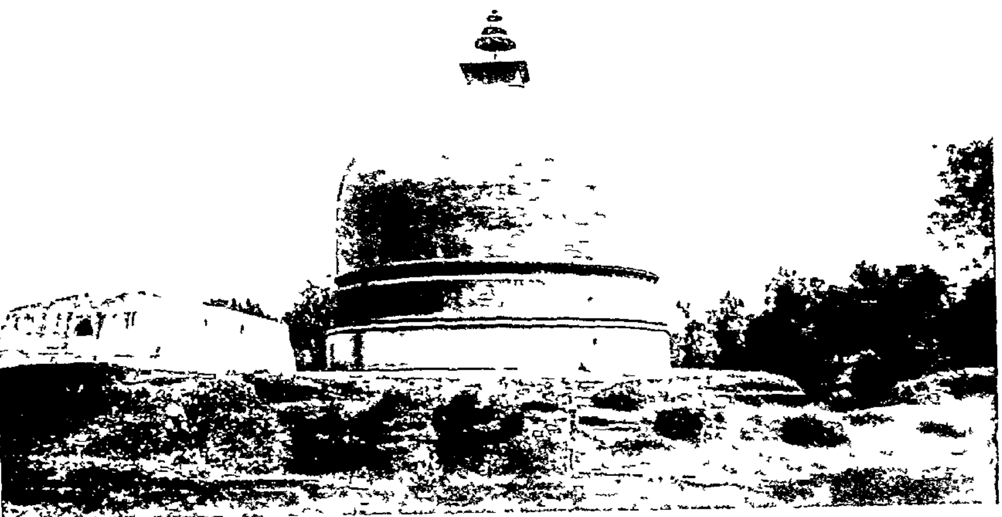
(*d*) SIKANDAR SHAH LODI'S TOMB AT KHAIRPUR. SOUTH-WEST BASTION OF THE ENCLOSURE, AFTER CONSERVATION.

CONSERVATION. KALANJAR, KASIA AND DEOGARH.

PLATE III.



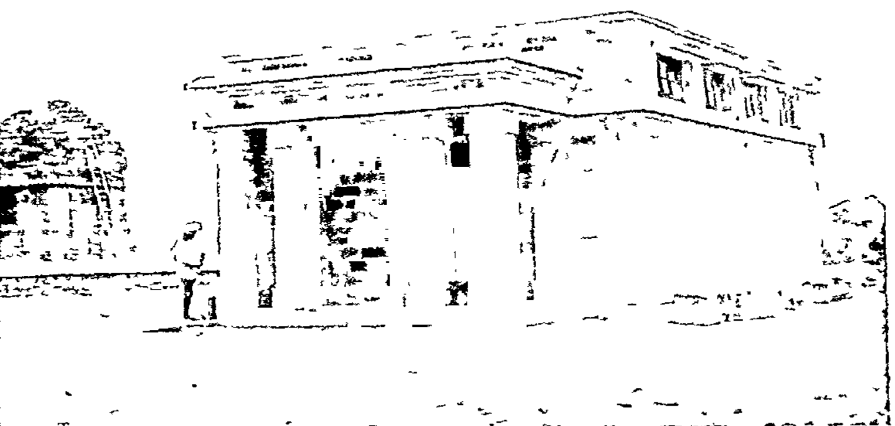
(a) KALANJAR FORT. NEW RETAINING WALL.



(b) KASIA. NIRVĀNA STŪPA AFTER RESTORATION; FROM SOUTH-EAST.



(c) DEOGARH. VARĀHA TEMPLE AFTER CONSERVATION; FROM SOUTH-WEST.



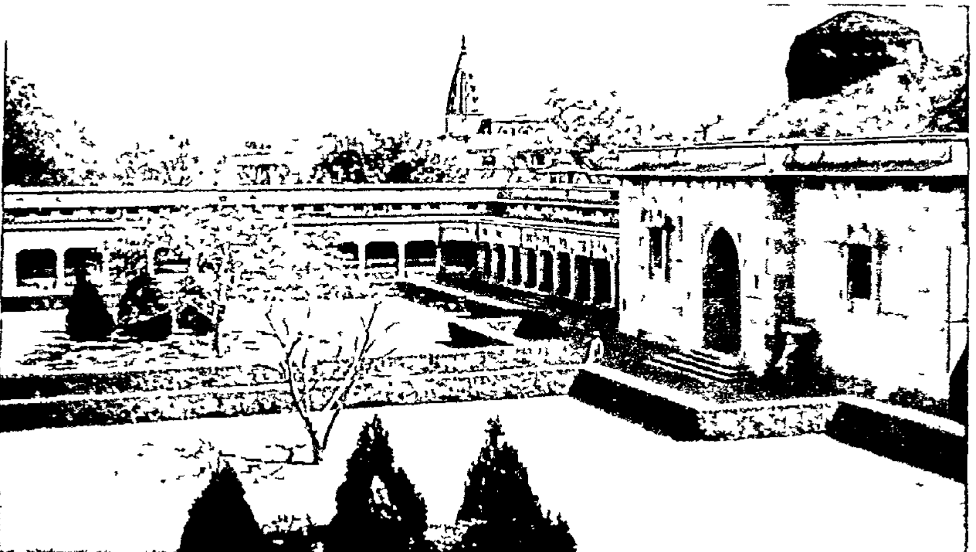
(d) DEOGARH. NEW SCULPTURE GODOWN.

PLATE IV.

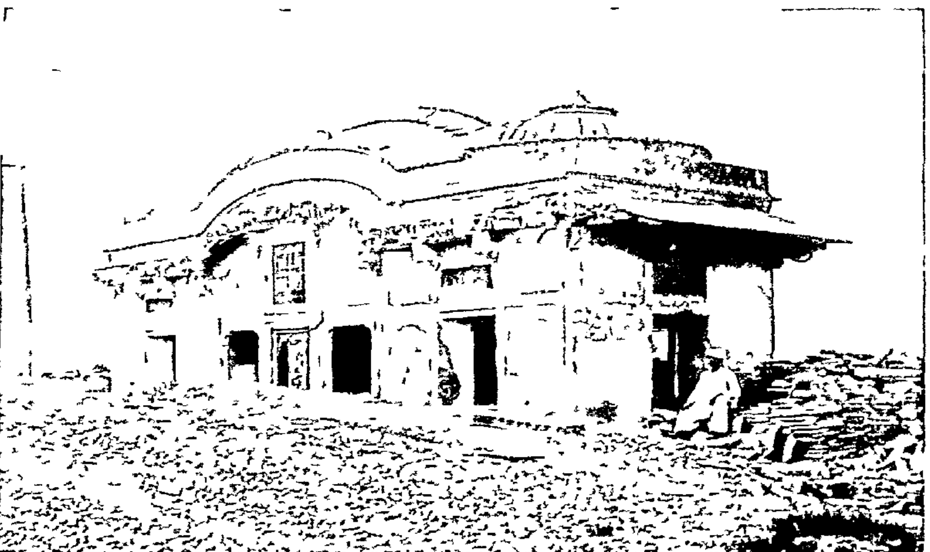
CONSERVATION. SARNATH AND LAHORE FORT.



(a) SARNATH. MONASTERY VI DURING CONSERVATION; FROM NORTH.

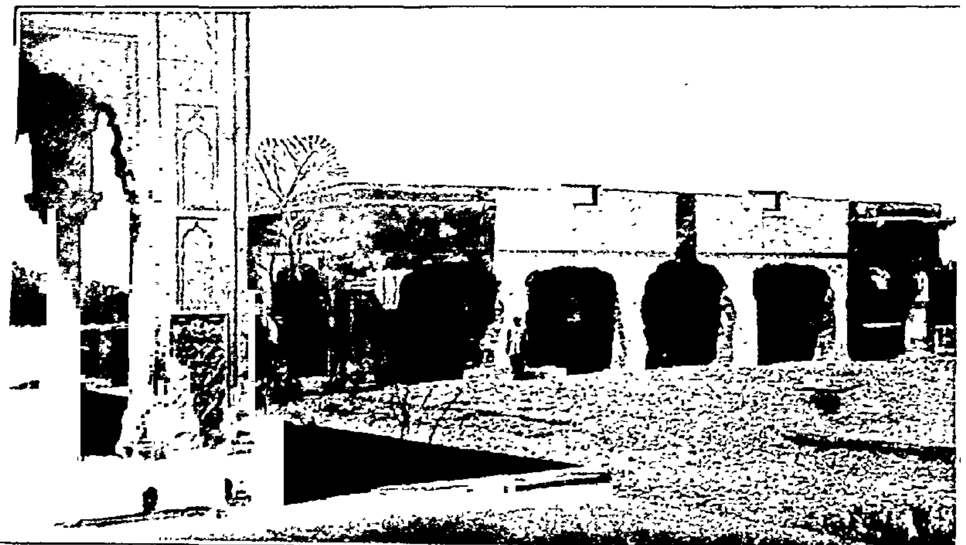


(b) SARNATH. MUSEUM GARDEN AFTER RE-LAYING OF LAWNS.

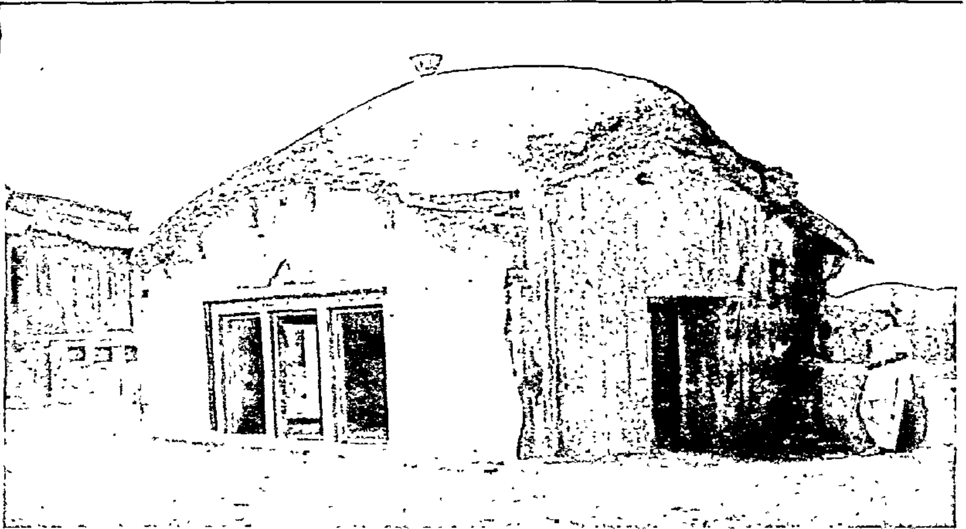


(c) LAHORE FORT. PAVILION TO THE EAST OF BARI KHWABGAH AFTER REMOVAL OF MODERN ADDITIONS.

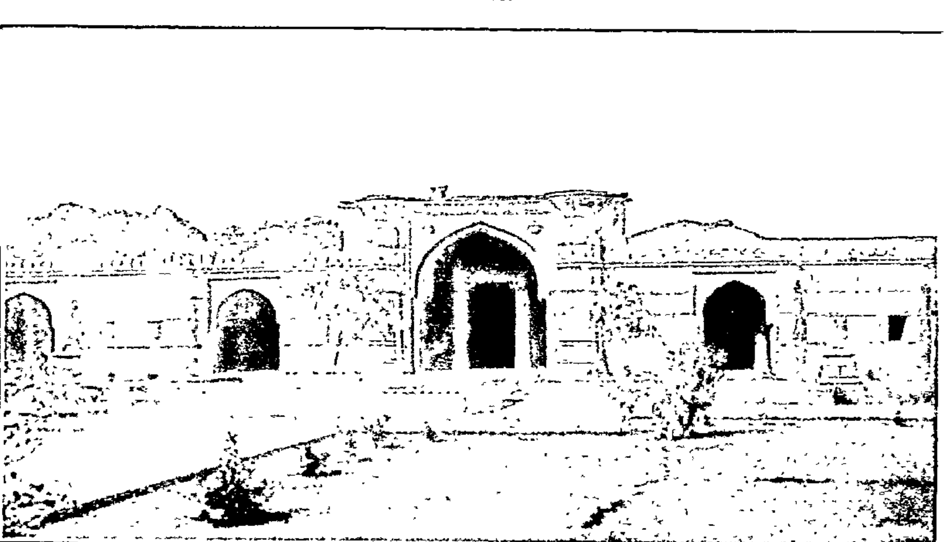
LAHORE FORT, AHMEDABAD AND MULTAN.



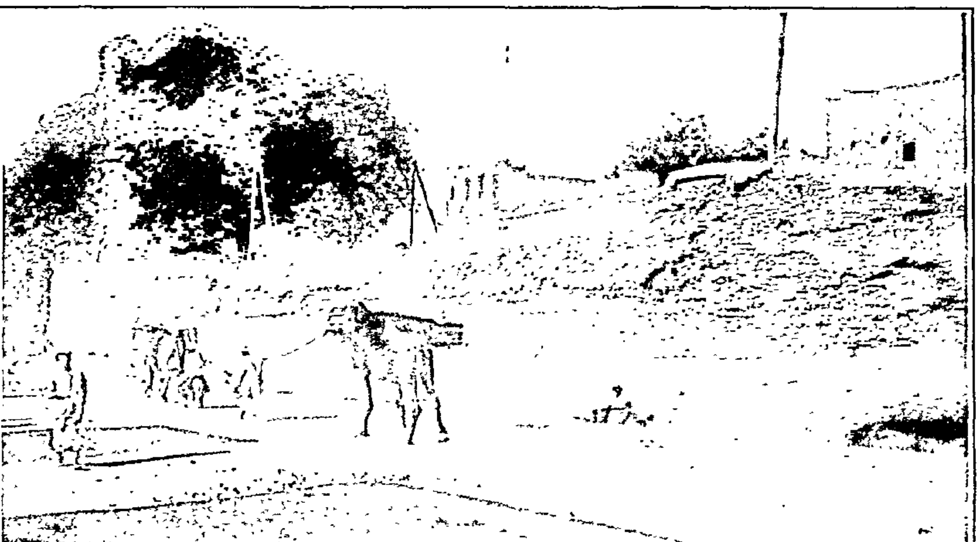
(a) LAHORE FORT. SIKH BARADARI TO EAST OF SHISH MAHAL AFTER REMOVAL OF MODERN ADDITIONS.



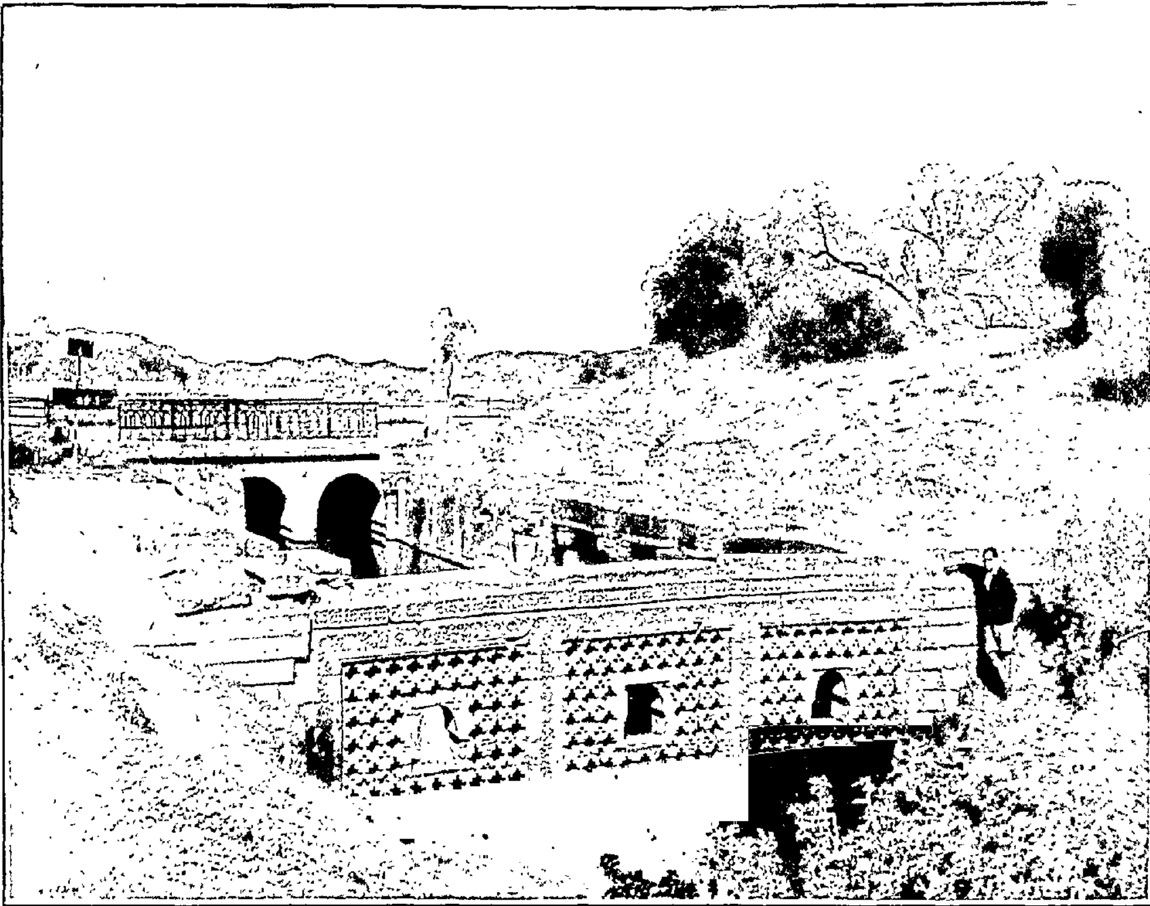
(b) LAHORE FORT. PAVILION IN THE RUINED QUADRANGLE OF KHILWAT KHANA AFTER REMOVAL OF MODERN ADDITIONS.



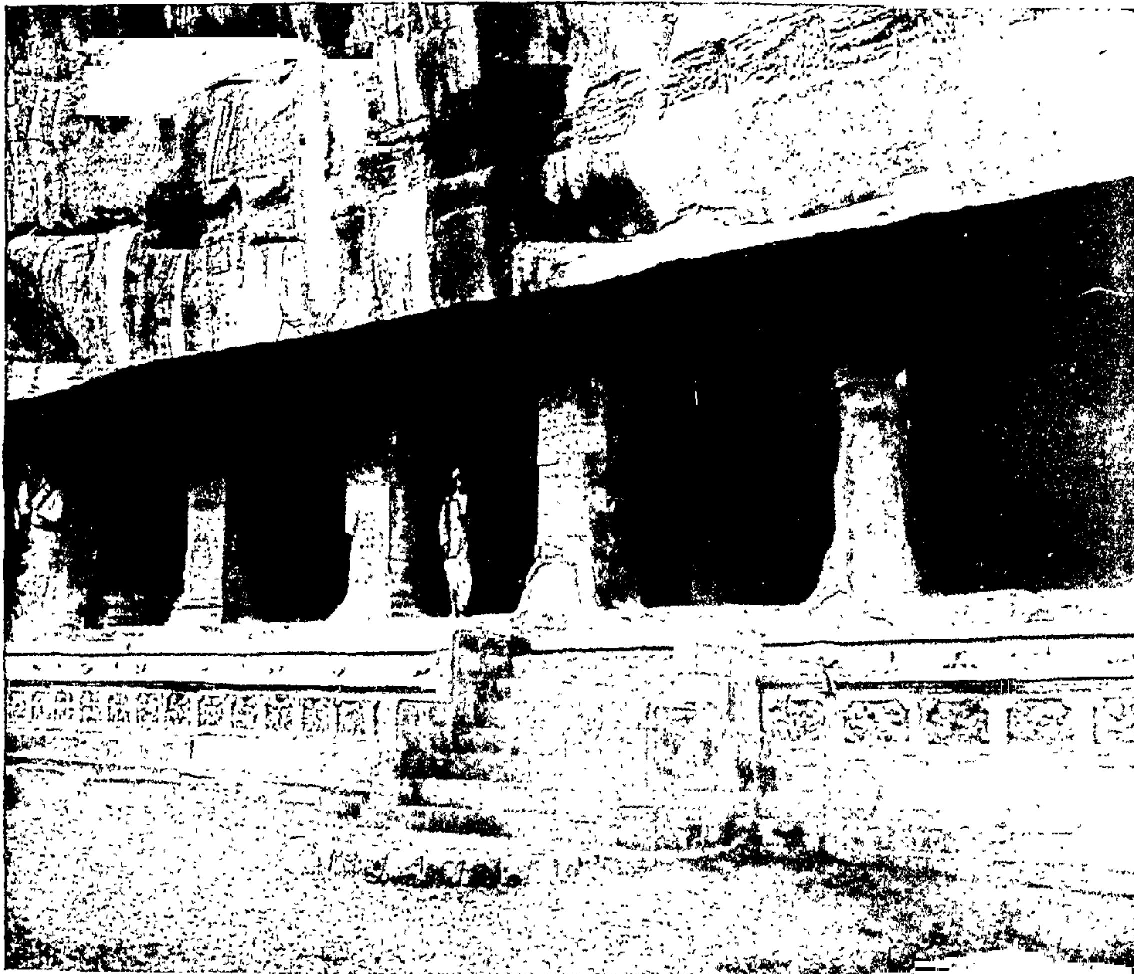
(c) AHMEDABAD. AHMAD SHAH'S MOSQUE AFTER CONSERVATION.



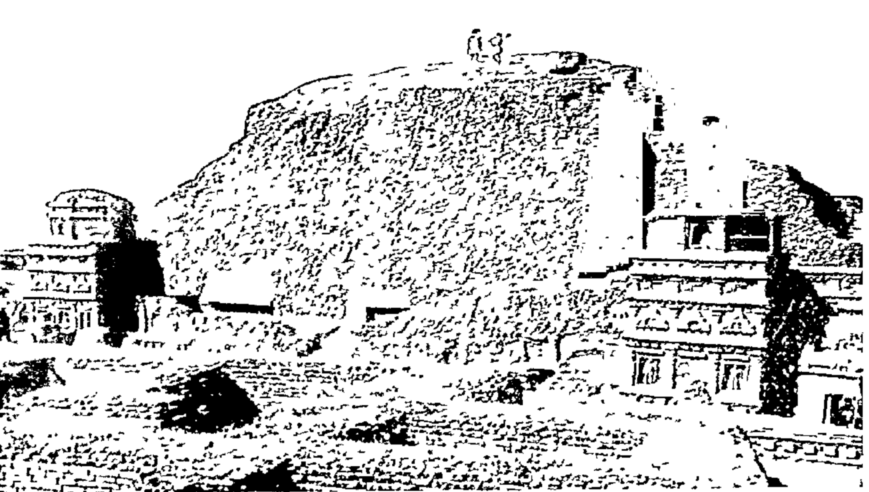
(d) MULTAN. EASTERN CITY WALL WITH KHUNI BURJ AND A BASTION ; FROM NORTH.



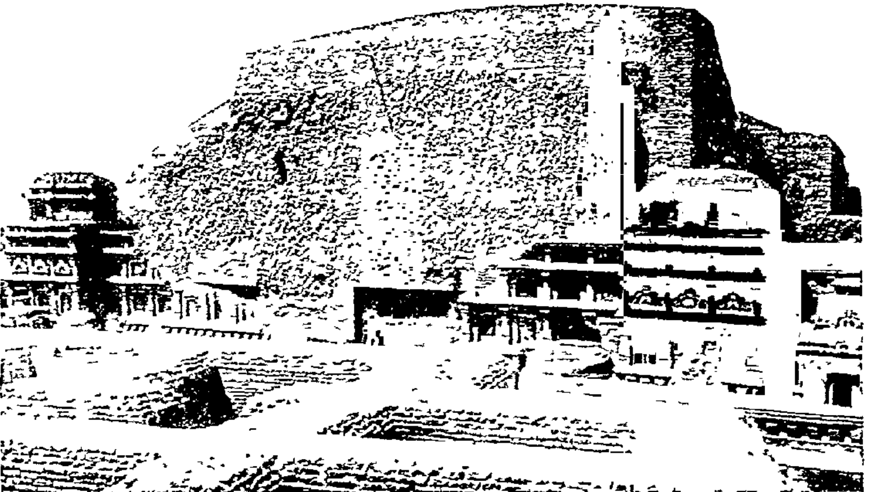
(*a*) AHMEDABAD. KANKARIA TANK (HAUZ-I-QUTB) SHOWING REPAIRS TO THE JALI WORK OF INLET.



(*b*) BADAMI. CAVE No. 4 AFTER CONSERVATION.



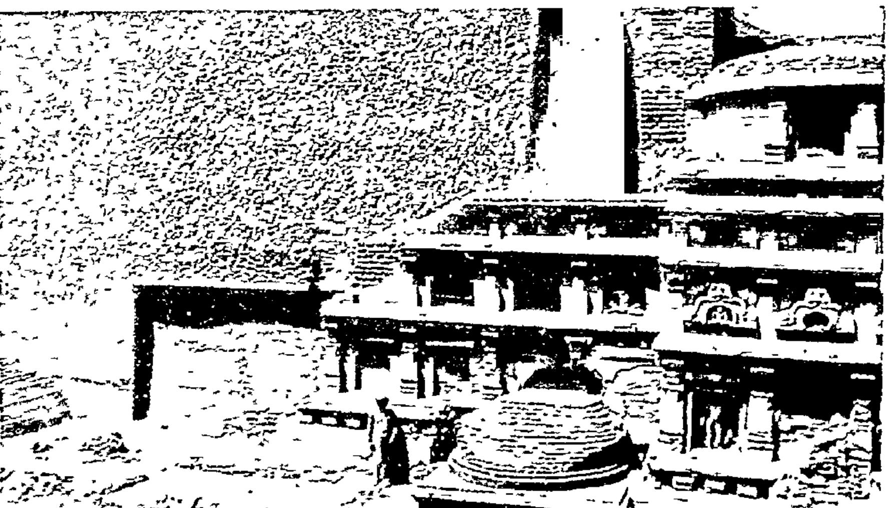
(*a*) Nalanda. Stūpa Site No. 3 (east front) as excavated.



(*b*) Nalanda. Stūpa site No. 3 (east front) after repair of 5th Stūpa façade and water proofing top of mound.

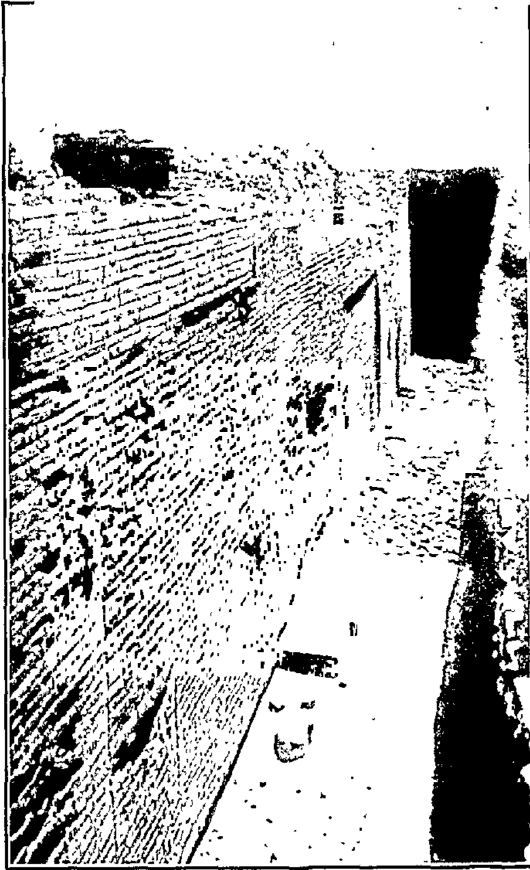


(*c*) Nalanda. Stūpa Site No. 3 (east front); near view of 5th Stūpa façade (north end) as excavated.

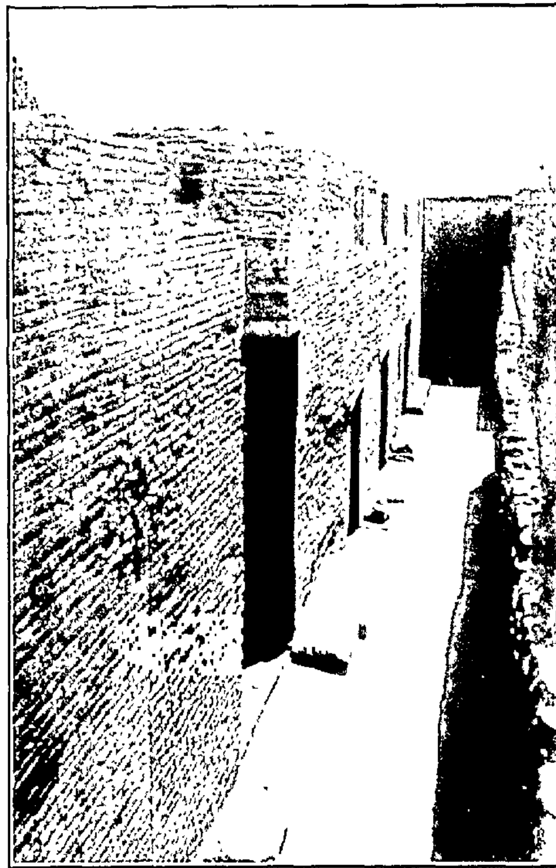


(*d*) Nalanda. Stūpa Site No. 3 (east front); near view of 5th Stūpa (north end) after repair.

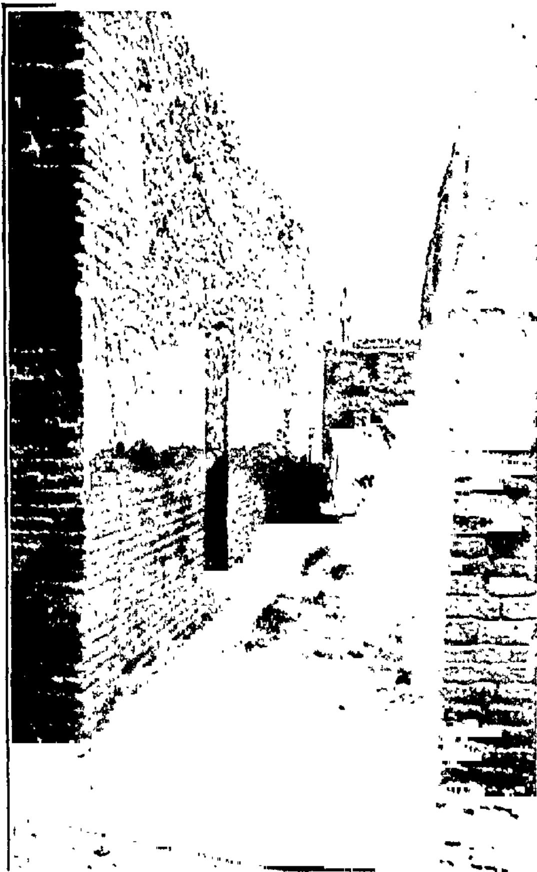
CONSERVATION, NALANDA.



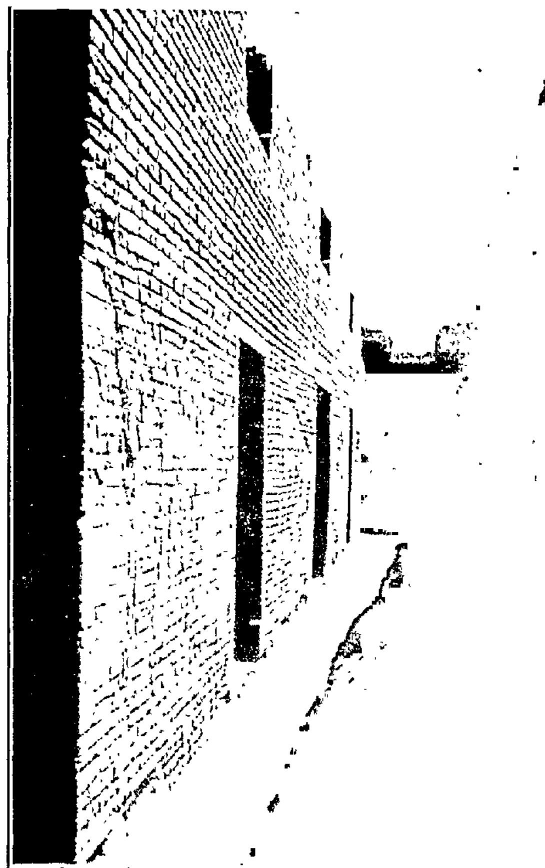
(a) Nalanda. Monastery Site No. 1. East verandah, before opening up later levels.



(b) Nalanda. Monastery Site No. 1. East verandah after opening up later levels to expose half of entrance to sanctum of Devapāla Monastery below.



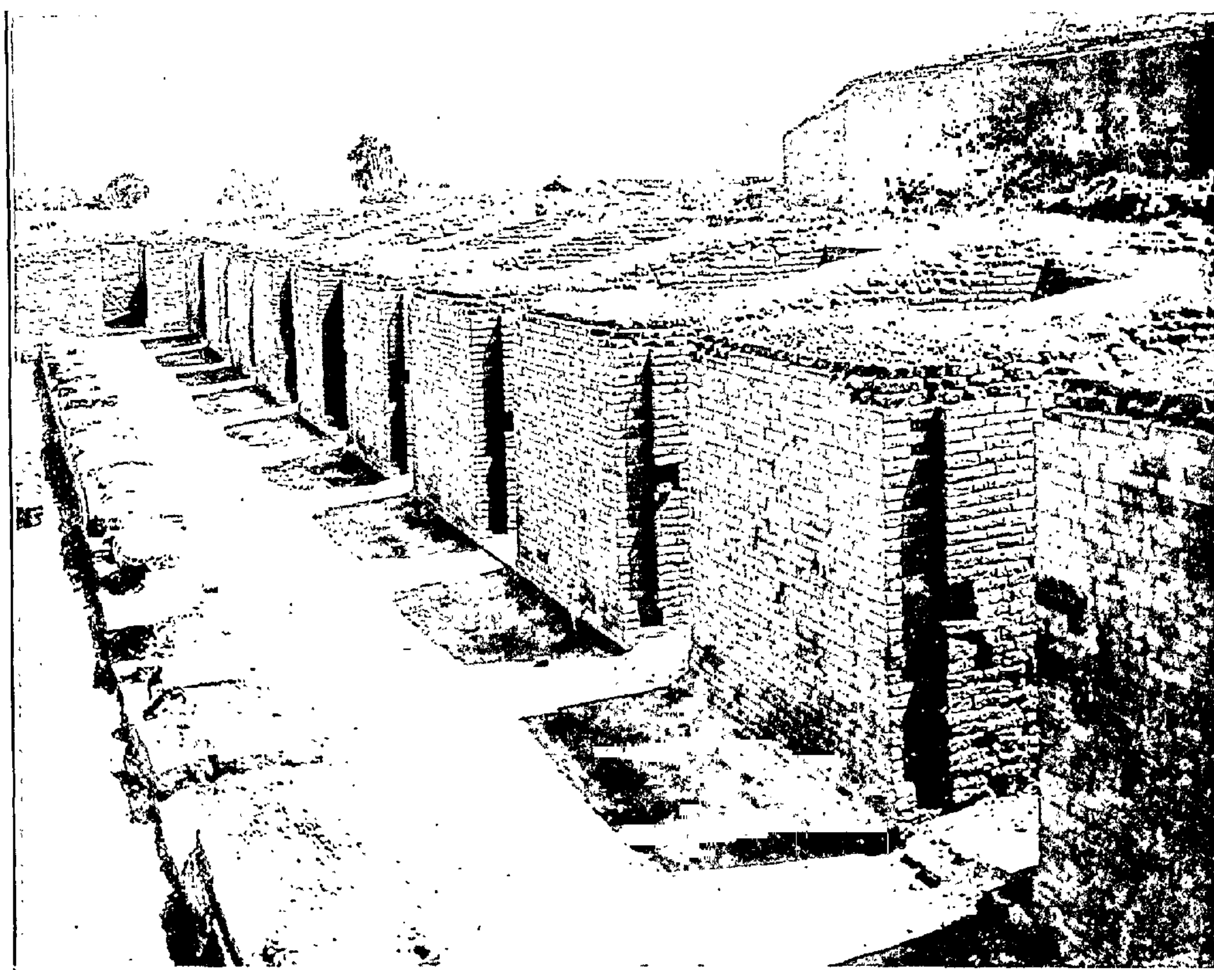
(c) Nalanda. Monastery Site No. 4. North verandah as excavated to Devapāla level.



(d) Nalanda. Monastery Site No. 4. North verandah, after repair of cell walls and doorways of Devapāla monastery.



(a) NALANDA. MONASTERY SITE NO. 6. SOUTH VERANDAH OF TOPMOST STRUCTURE AS EXCAVATED.



(b) NALANDA. MONASTERY SITE NO. 6. SOUTH VERANDAH OF TOPMOST STRUCTURE AFTER CONSERVATION.

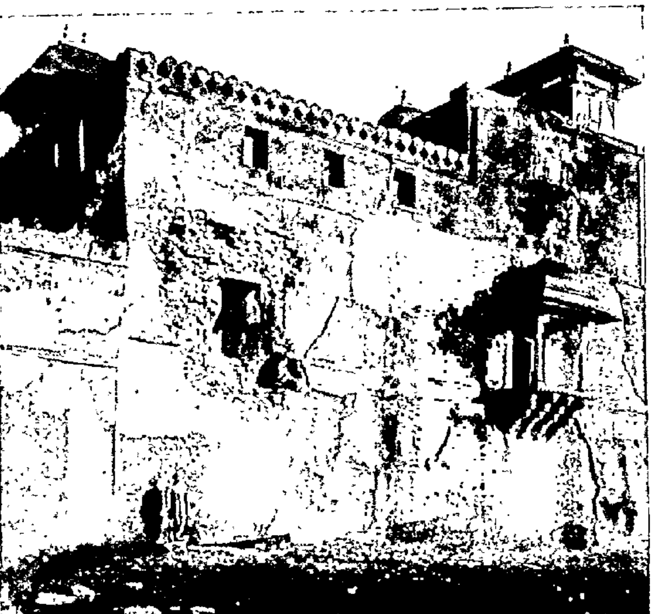
CONSERVATION. NALANDA.



(a) NALANDA. MONASTERY SITE No. 6, DURING CLEARANCE OF INNER QUADRANGLE OF TOPMOST STRUCTURE.



(b) NALANDA. MONASTERY SITE No. 6, AFTER CLEARANCE OF INNER QUADRANGLE OF TOPMOST STRUCTURE AND REPAIR OF CELL WALLS.



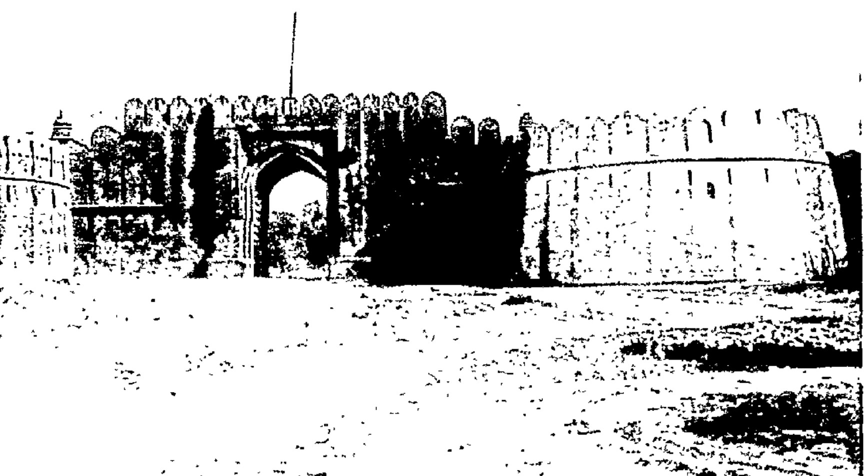
(*a*) ROHTASGARH. MAN SINGH'S MAHAL BEFORE RECONSTRUCTION OF FALLEN ORIEL-BALCONY OUTSIDE DARBAR HALL.



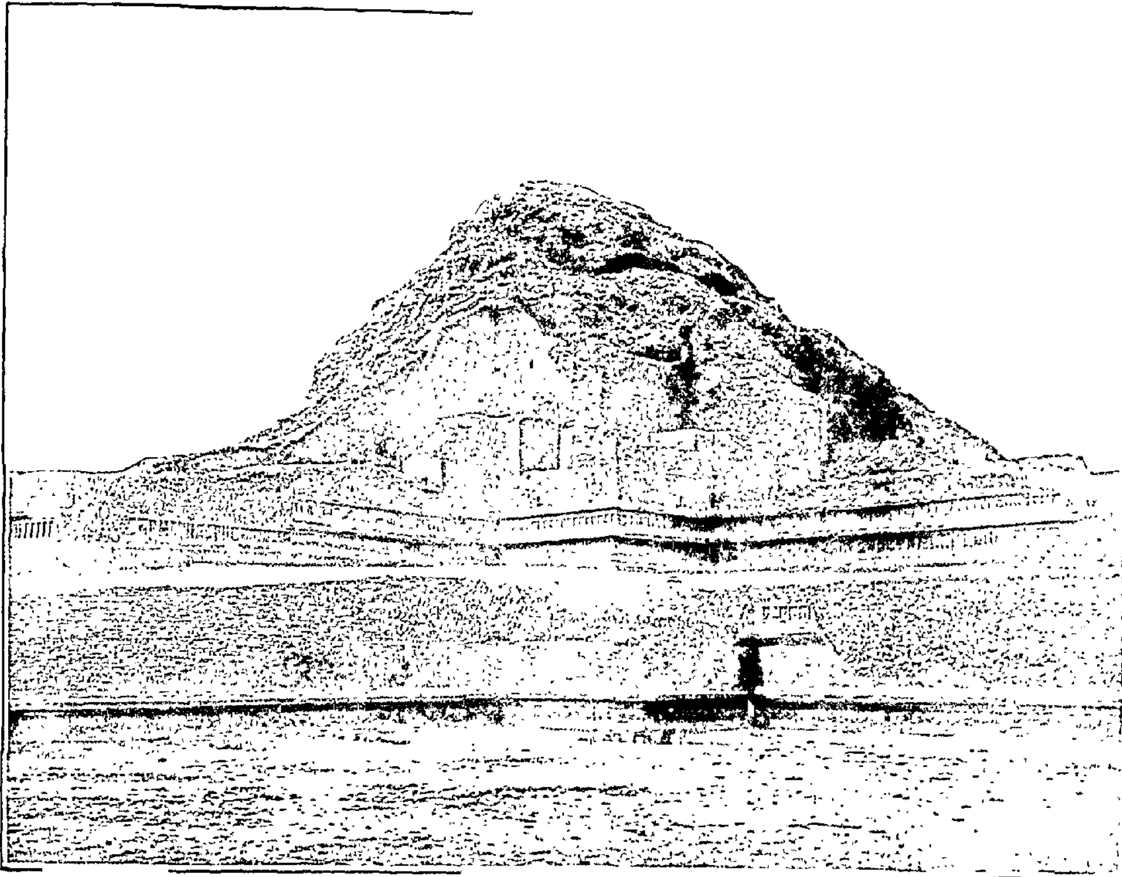
(*b*) ROHTASGARH. MAN SINGH'S MAHAL AFTER RECONSTRUCTION OF FALLEN ORIEL-BALCONY AND ERECTION OF BUTTRESSES.



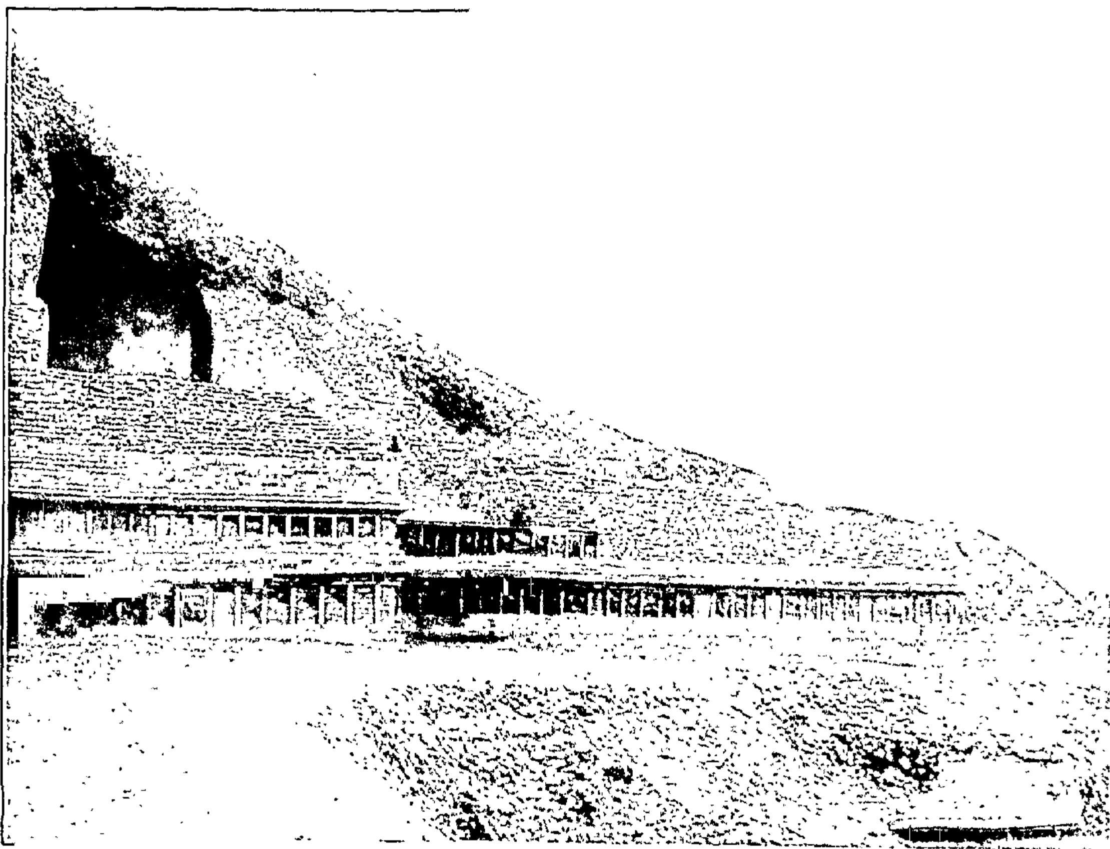
(*c*) CHANDA (C.P.). BIMBA GATE OF GOND CITY WALL, BEFORE CONSERVATION.



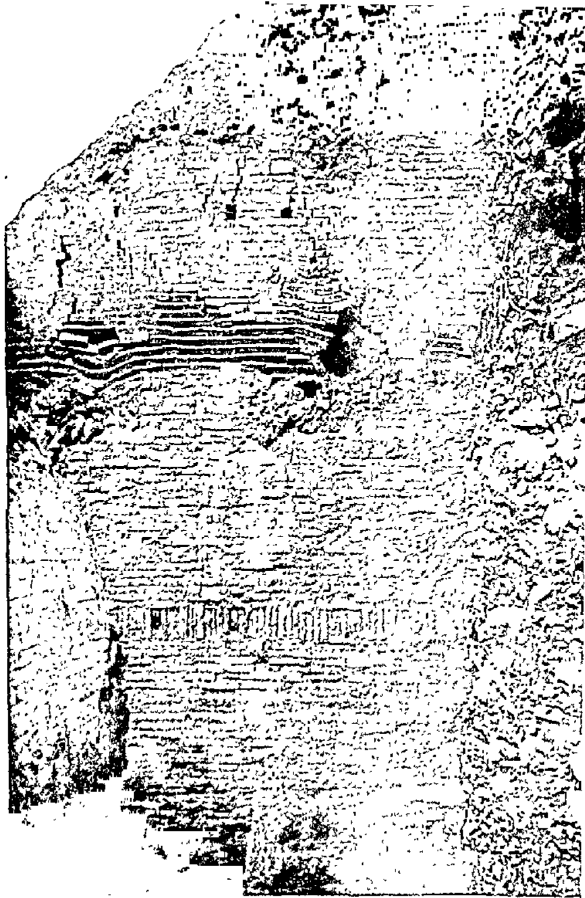
(*d*) CHANDA (C.P.). BIMBA GATE OF GOND CITY WALL, AFTER REPAIR OF FALLEN BASTION.



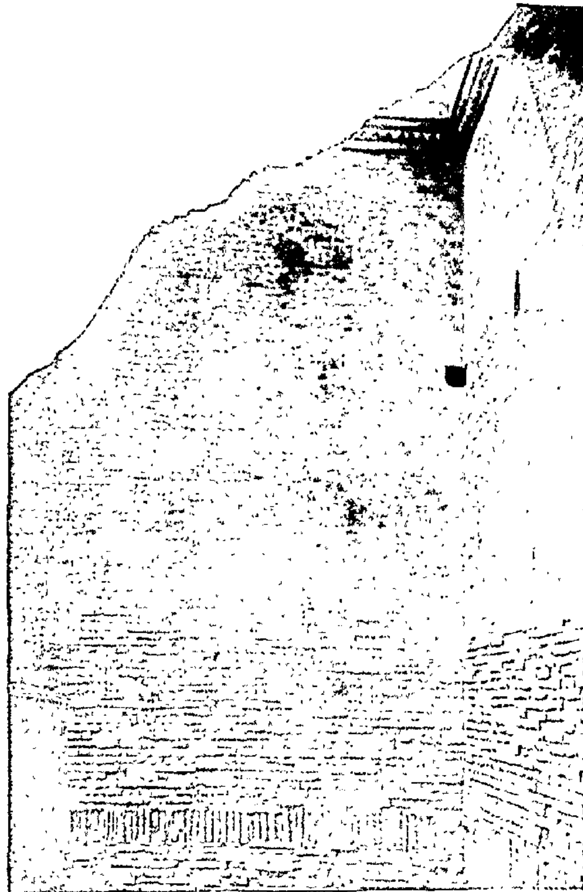
(a) PAHARPUR. NEAR VIEW OF MAIN TEMPLE, FROM SOUTH-WEST.



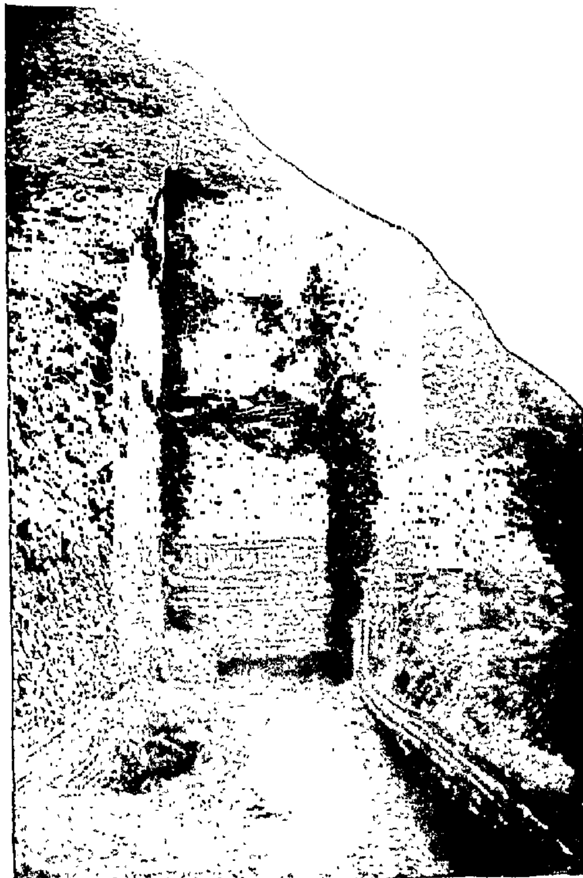
(b) PAHARPUR. MAIN TEMPLE AFTER EXCAVATION. DETAILS OF FIRST TERRACE VERANDAH ON SOUTH-EAST.



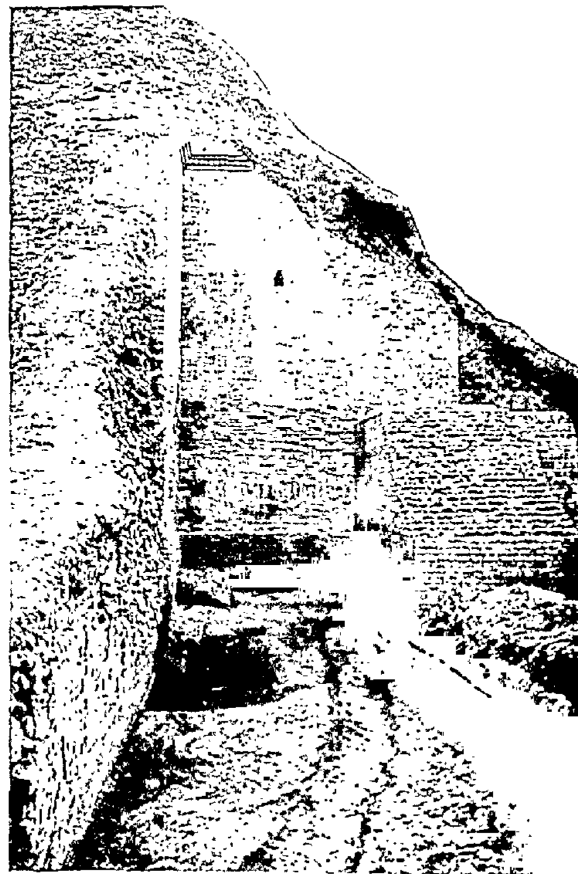
(a) PAHARPUR. MAIN TEMPLE, WALL OF SECOND TERRACE ON SOUTH-WEST, BEFORE CONSERVATION.



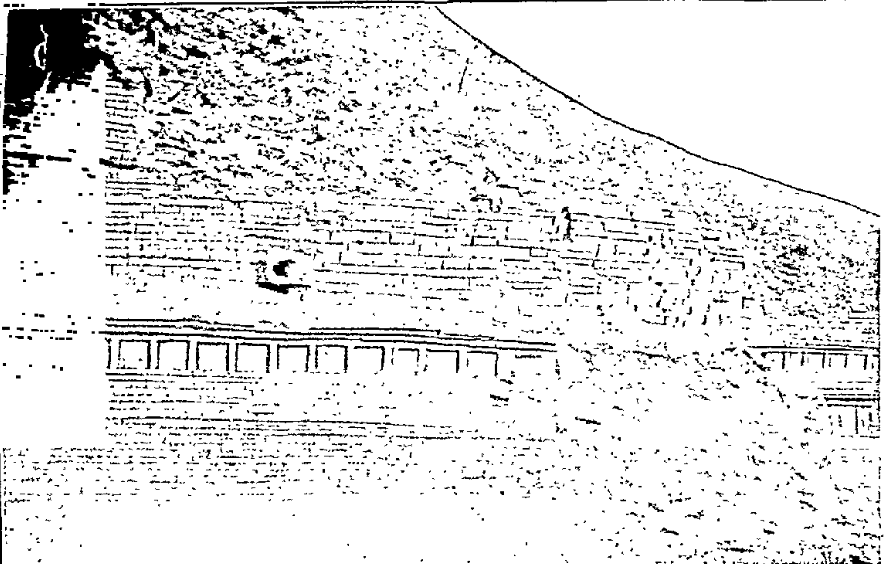
(b) PAHARPUR. MAIN TEMPLE. WALL OF SECOND TERRACE ON SOUTH-WEST, AFTER CONSERVATION.



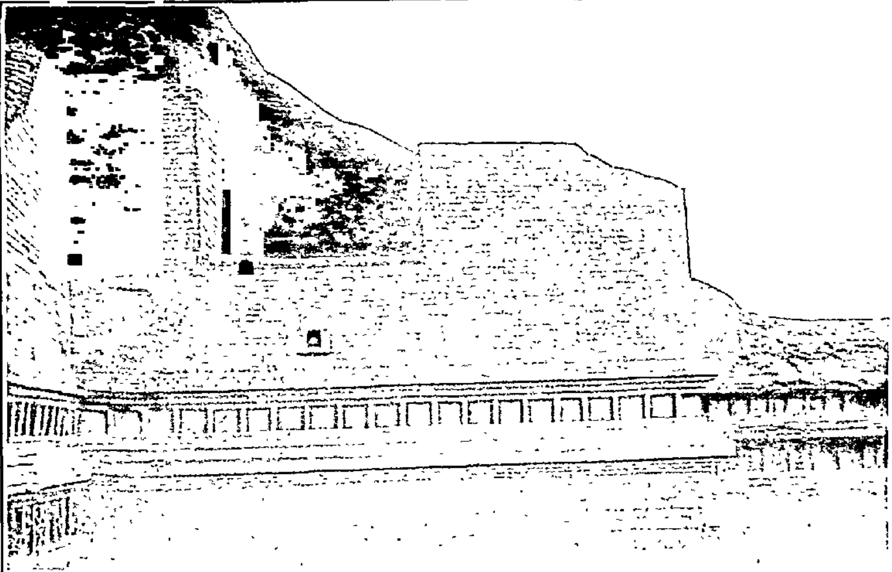
(c) PAHARPUR. MAIN TEMPLE. SECOND TERRACE ON SOUTH-WEST, BEFORE CONSERVATION.



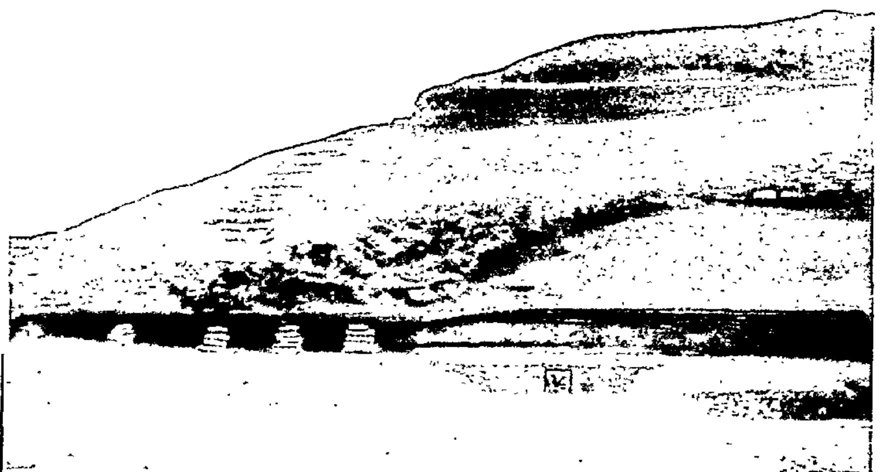
(d) PAHARPUR. MAIN TEMPLE AFTER EXCAVATION. SECOND TERRACE ON SOUTH-WEST, AFTER CONSERVATION.



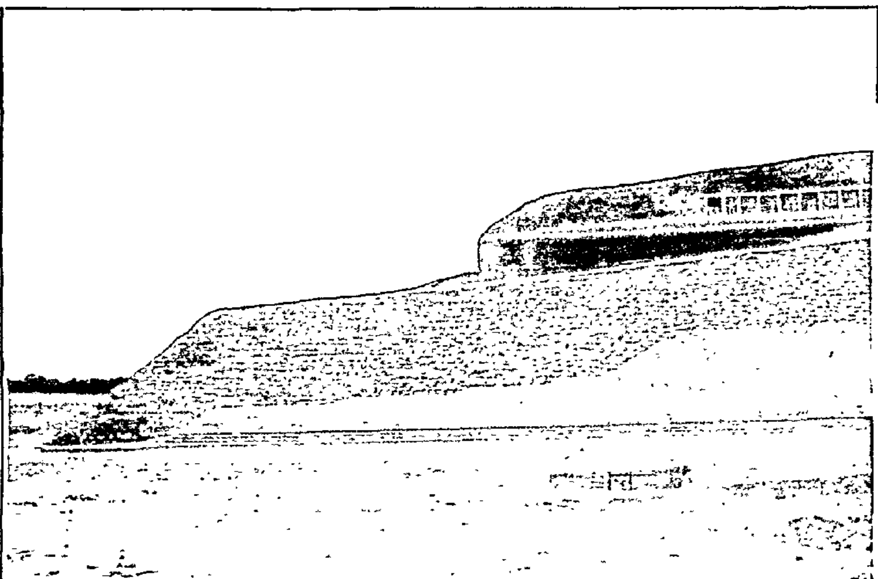
(a) PAHARPUR. MAIN TEMPLE. FIRST TERRACE VERANDAH ON SOUTH-WEST, BEFORE CONSERVATION.



(b) PAHARPUR. MAIN TEMPLE. FIRST TERRACE VERANDAH ON SOUTH-WEST, AFTER CONSERVATION.

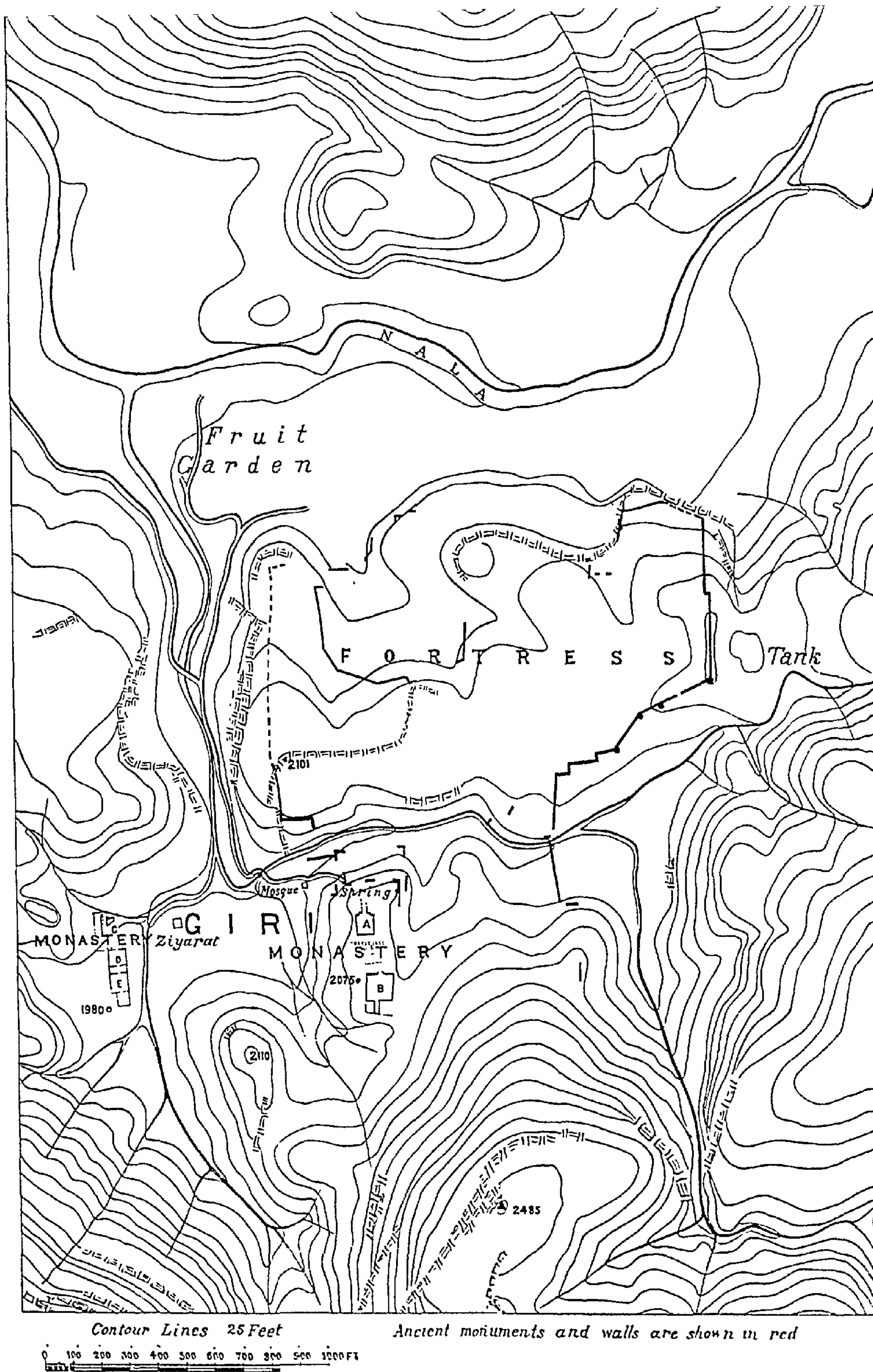


(c) PAHARPUR. MAIN TEMPLE. BASEMENT WALL ON SOUTH-WEST, BEFORE CONSERVATION.



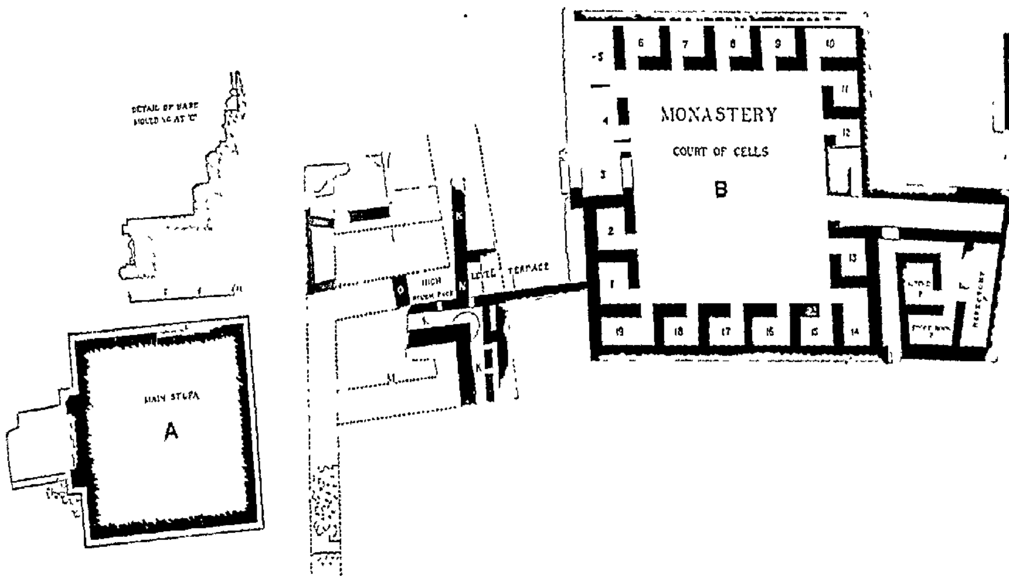
(d) PAHARPUR. MAIN TEMPLE. BASEMENT WALL ON SOUTH-WEST, AFTER CONSERVATION.

PLATE XV.

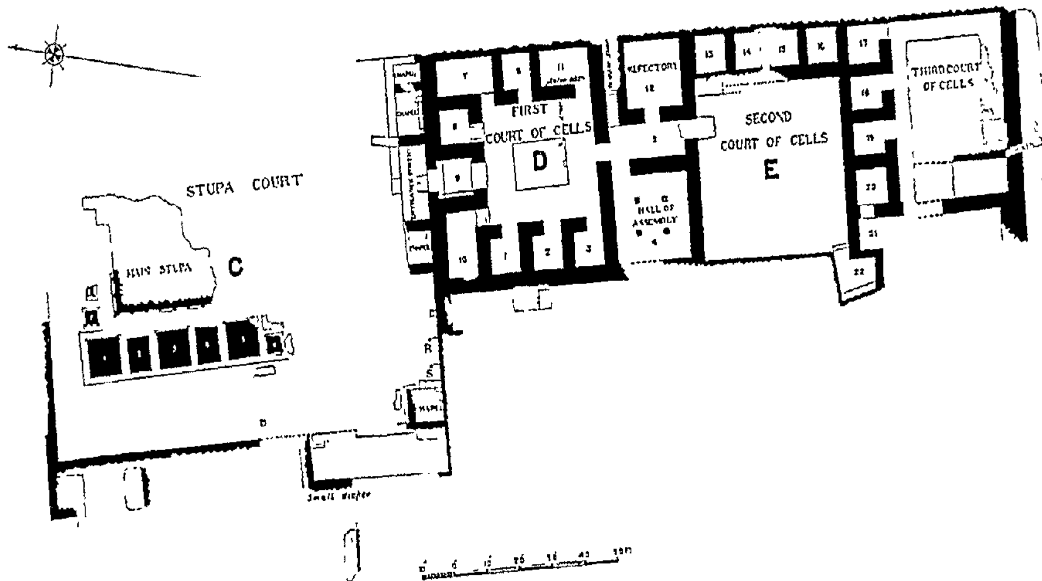


TAXILA. CONTOUR PLAN OF THE FORTRESS AND MONASTERIES OF GIRI

EXPLORATION. TAXILA.



(a) Plan of Monasteries A and B at Giri.



(b) Plan of Monasteries C, D and E at Giri.



(a) GIRI. SITE C. WEST FACE OF MAIN STUPA.



(b) GIRI. SITES C AND D. GENERAL VIEW OF STUPAS AND MONASTERY, FROM NORTH-WEST.



(*a*) GIRI. SITES C, D AND E. GENERAL VIEW OF EXCAVATIONS FROM SOUTH-EAST.



(*b*) SIRKAP. TRENCH B. DRAIN PIPES.



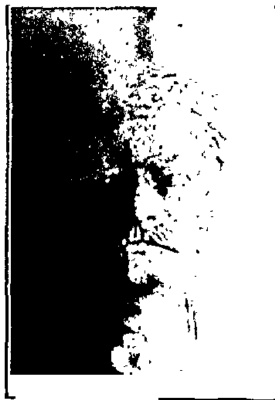
(*c*) SIRKAP, E. GROUP OF COPPER OBJECTS *in situ*.



1



2



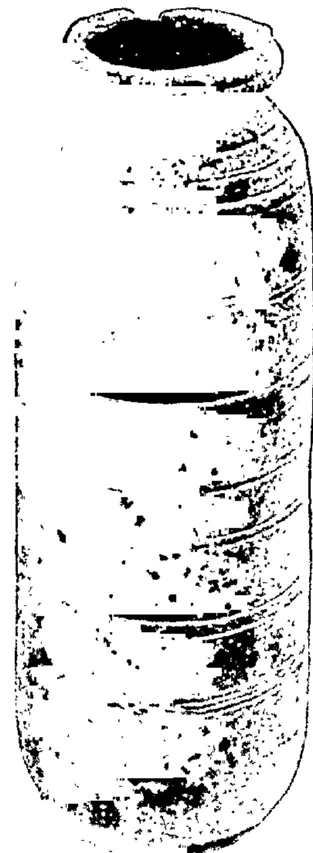
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4



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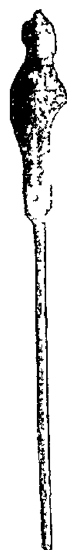


6

ANTIQUITIES FROM GIRI AND SIRKAP.



1



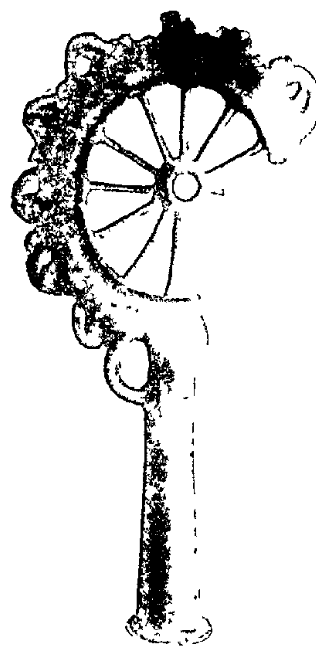
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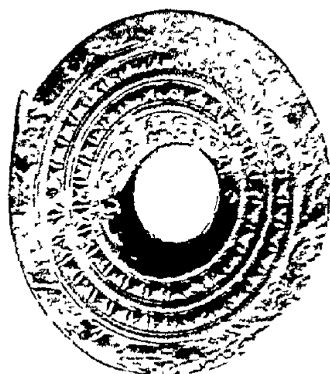
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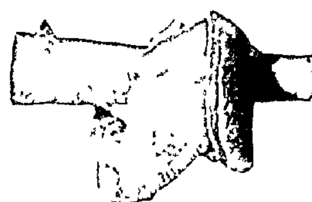


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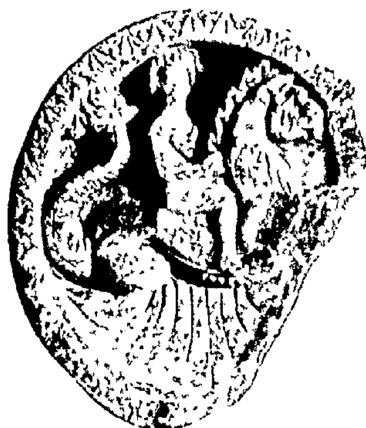


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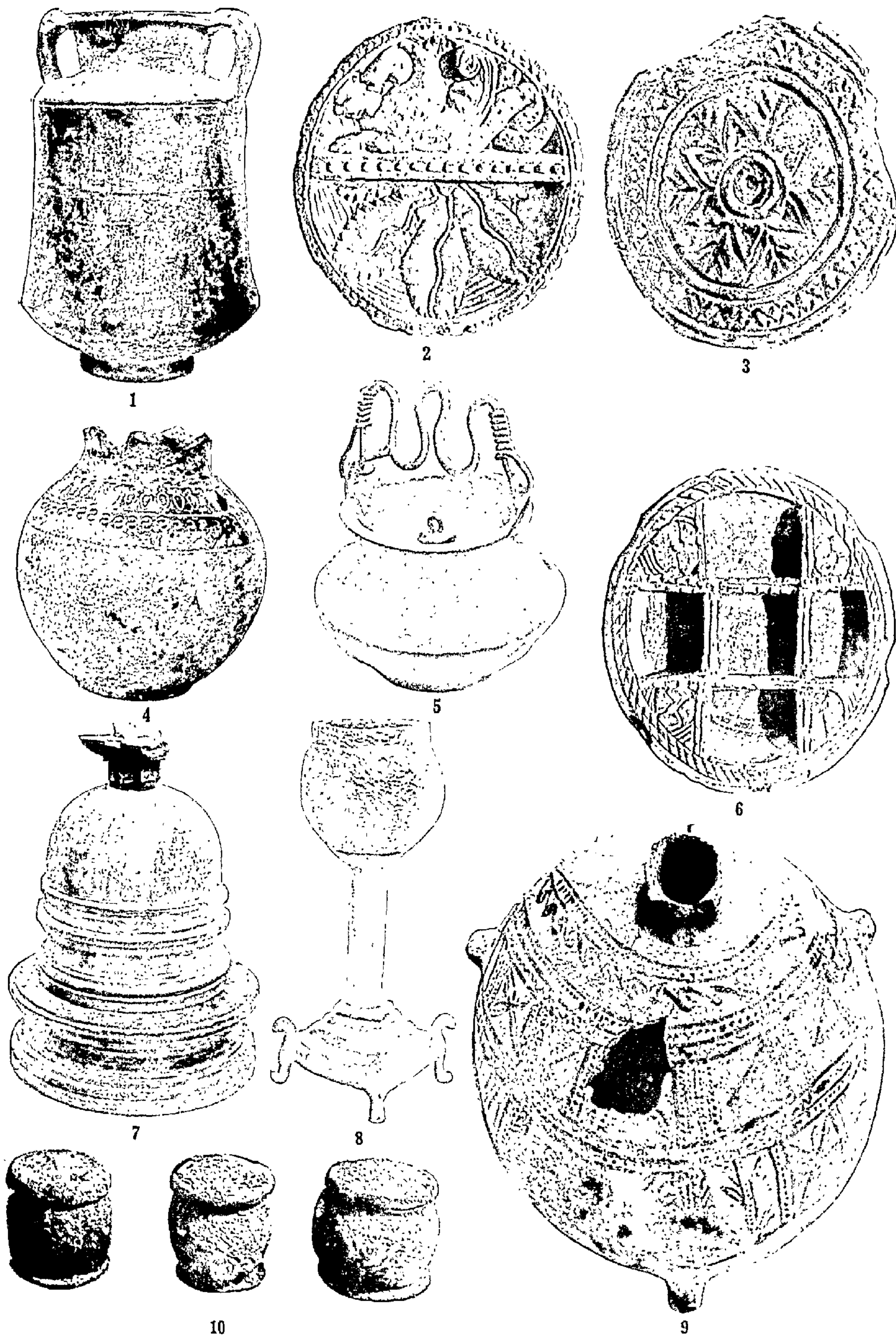


9



10

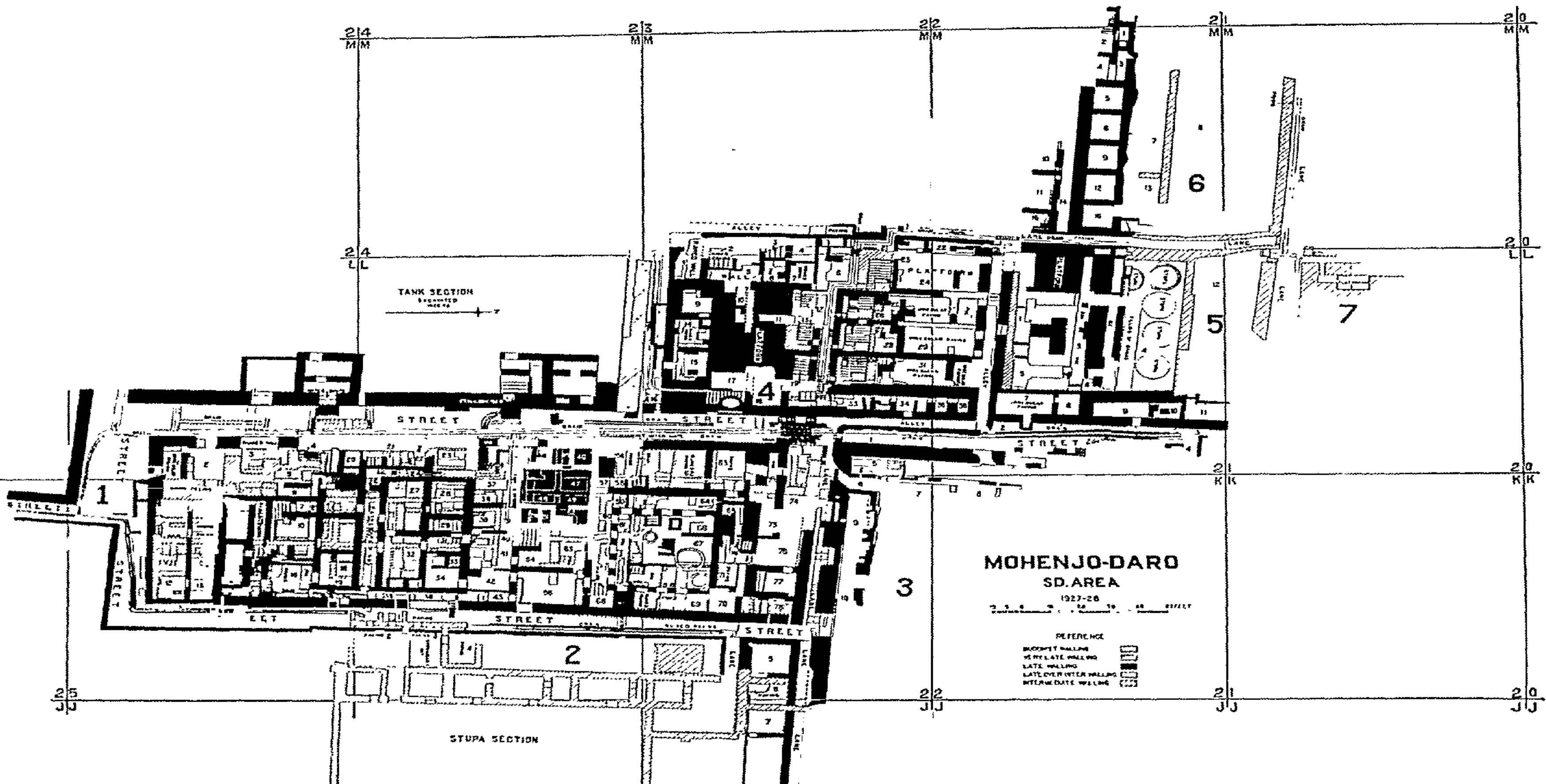
Antiquities from Giri and Sirkap.



1-9. Antiquities from Sirkap.

10. Three small copper pots with lids, found in excavation of old temple, Mulgaon, District Bombay.

EXPLORATION. MOHENJODARO. PLAN OF SD. AREA.

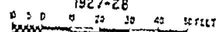


MOHENJO-DARO

DK.AREA

G.SECTION

1927-28



REFERENCE

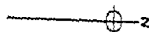
MUD BRICK WALLING

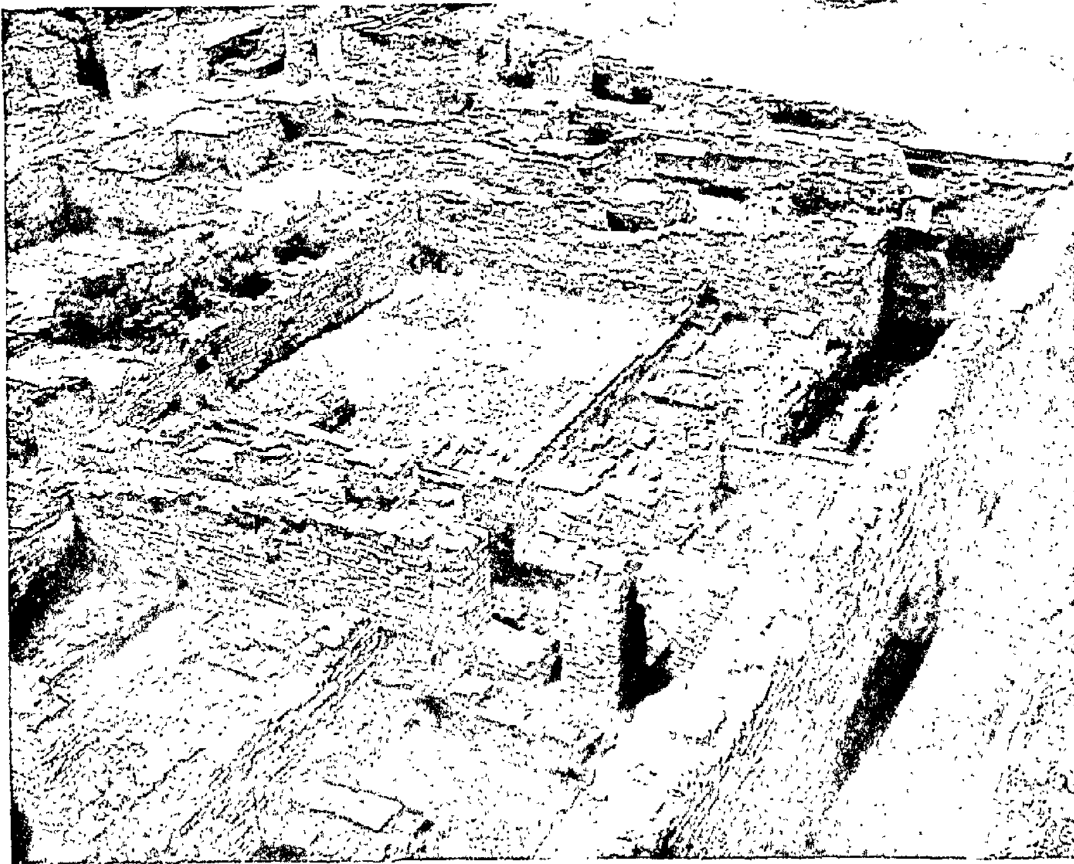
MUD & BURNT BRICK WALLING

VERY LATE WALLING

LATE WALLING

INTERMEDIATE WALLING





(a) SD. AREA, NORTHERN SECTION. FENESTRATED COURT IN BLOCK 5. LOOKING NORTH-NORTH-WEST.



(b) SD. AREA, NORTHERN SECTION. BIRD'S EYE VIEW OF NEW EXCAVATIONS. LOOKING SOUTH-EAST.



Sd. 3008.



Dk. 3615.



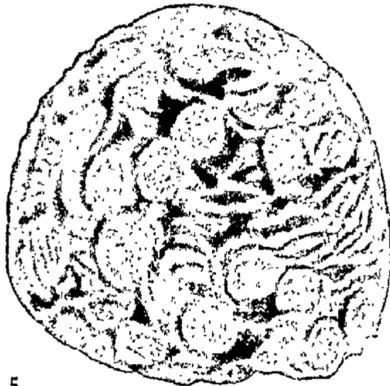
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Dk. 4134.



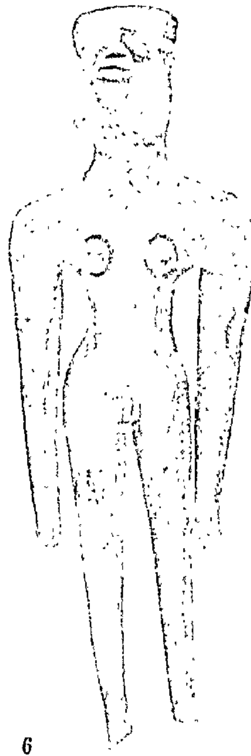
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Sd. 3319.



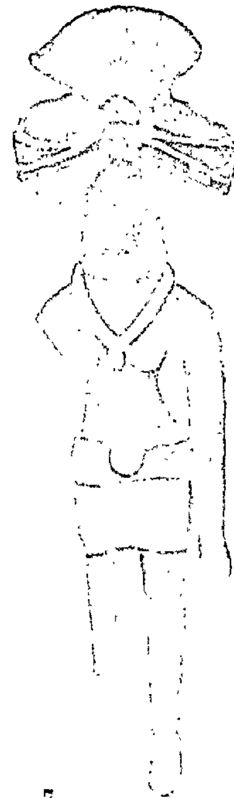
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Sd. 2887 *a*.



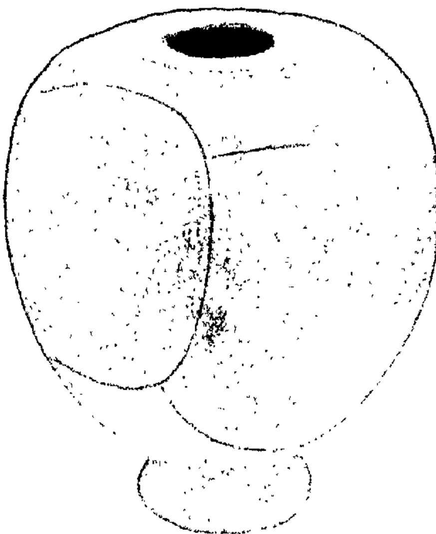
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Dk. 3509.



7

Dk. 3506.

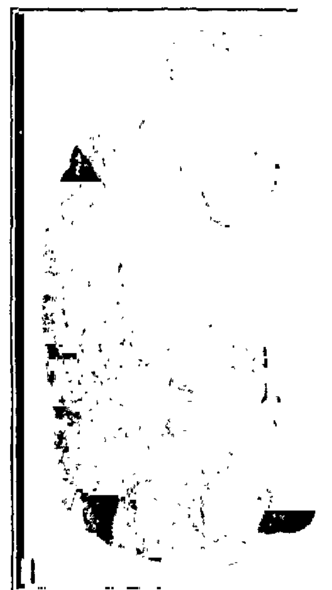


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Sd. 2887.



Dk. 3599.



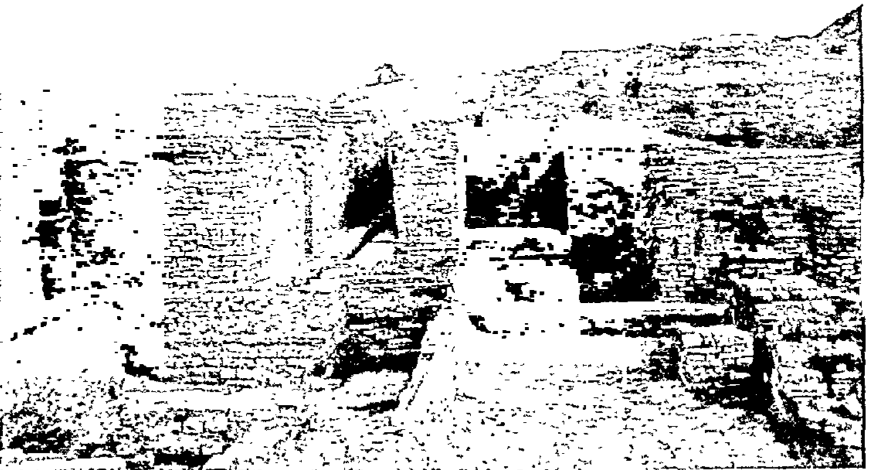


10

Dk. 4541.

Dk. 4647.

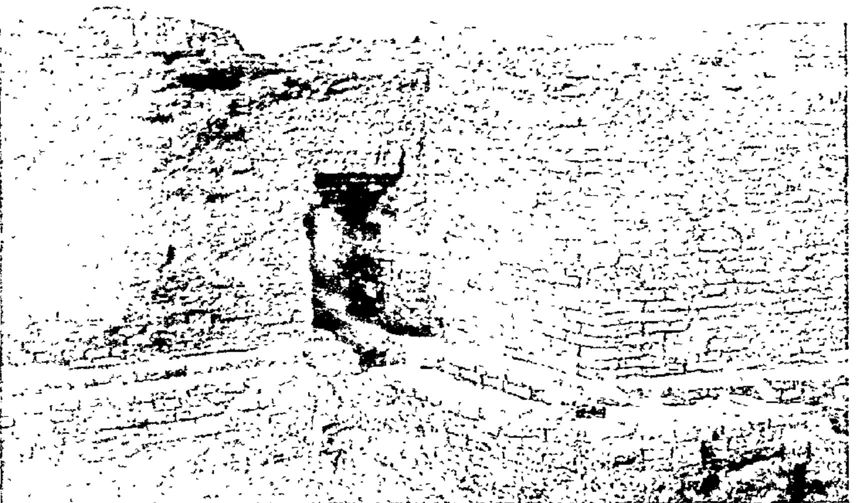
Mohenjodaro. Antiquities from Sd. and Dk. Areas.



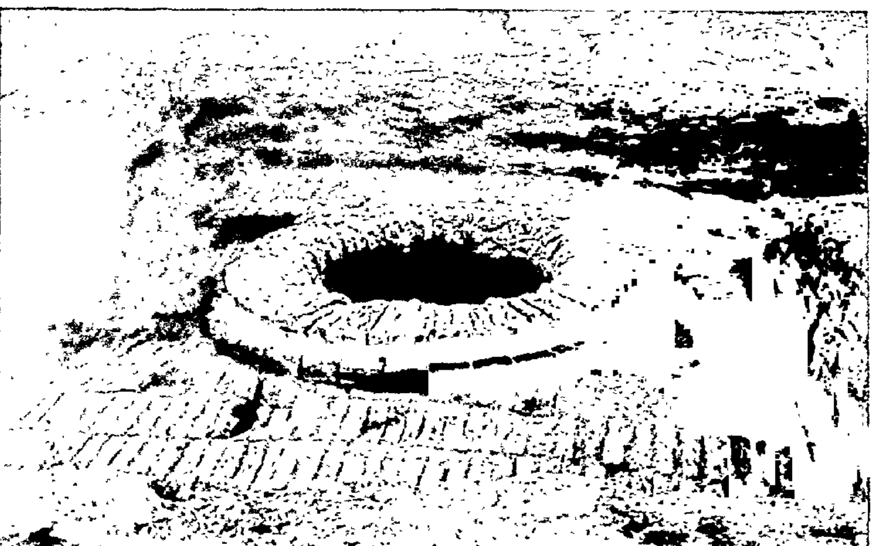
(a) SD. AREA. BLOCK 4. ENTRANCE TO BATH ROOM 23. LOOKING NORTH-NORTH-EAST.



(b) SD. AREA. BLOCK 4. PASSAGE BETWEEN BATH ROOMS. LOOKING EAST-NORTH-EAST.



(c) DK. AREA (G. SECTION). BLOCK 10, HOUSE II, ROOM 26. WELL AND PAVEMENT.



(d) DK. AREA (G. SECTION). BLOCK 9, COURT 21. POTTERY KILN.



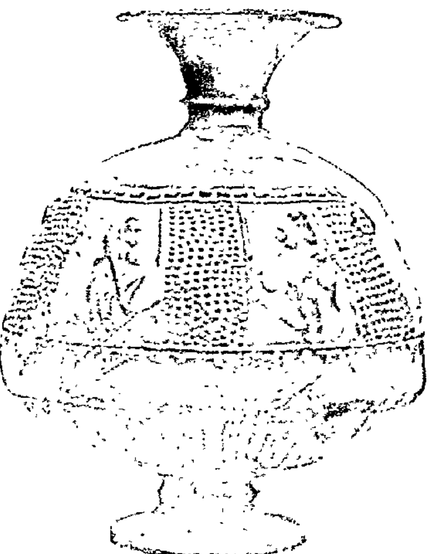
(a) JHUKAR, DISTRICT LARKANA. MOUND A, LOOKING NORTH-EAST.



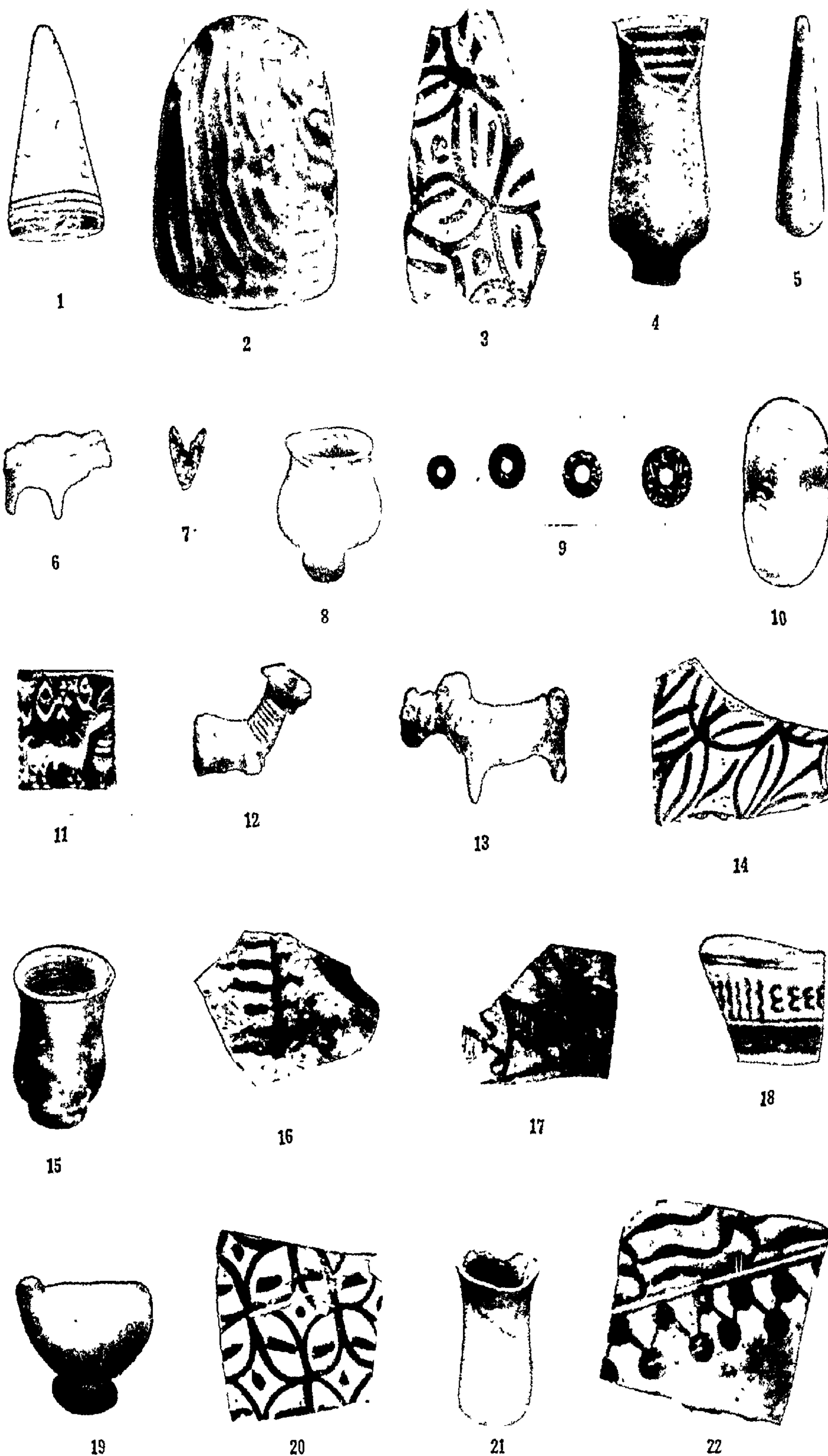
(b) JHUKAR, DISTRICT LARKANA. MOUND B, LOOKING SOUTH.



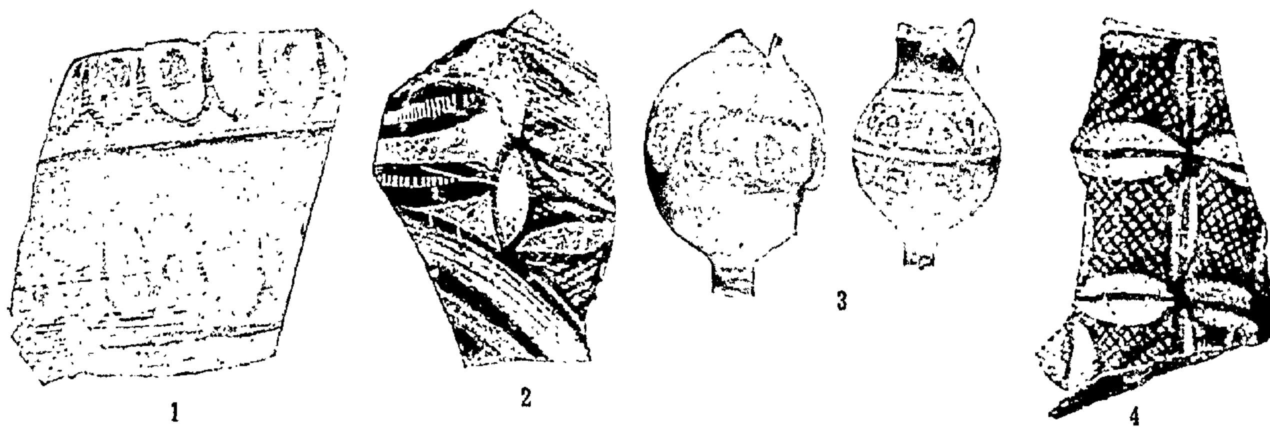
(c) JHUKAR, DISTRICT LARKANA. MOUND B, WALLS OF SUN-DRIED BRICKS, LOOKING NORTH.



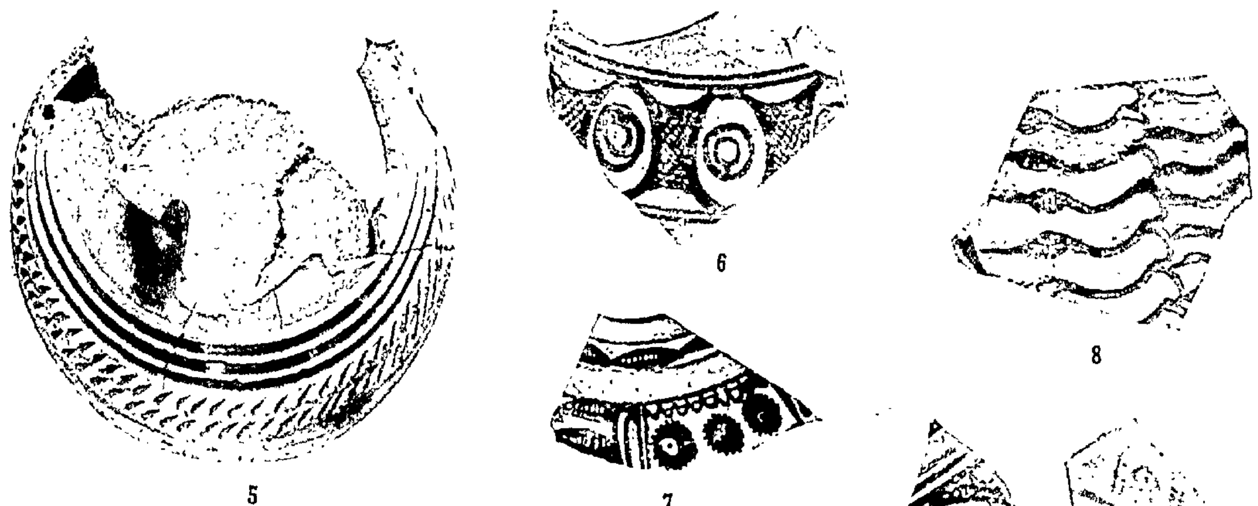
(d) EARTHENWARE VASE (No. 40). GUPTA PERIOD.



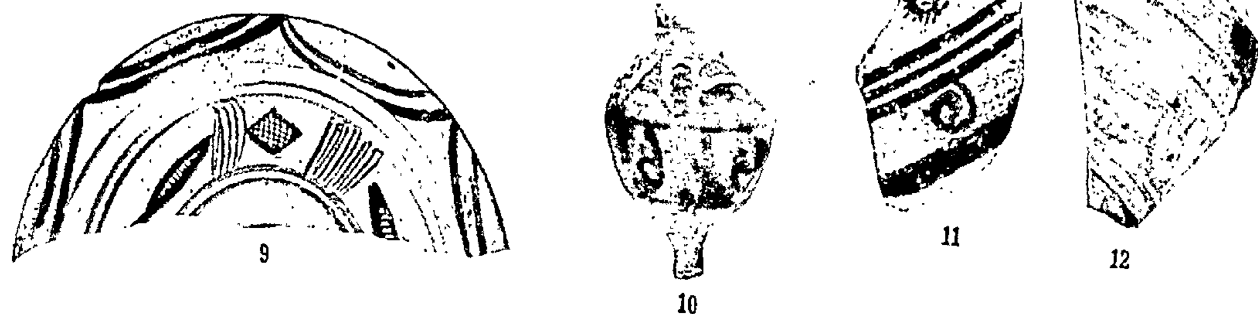
Jhukar, District Larkana. Prehistoric antiquities.



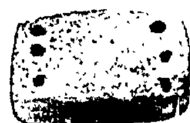
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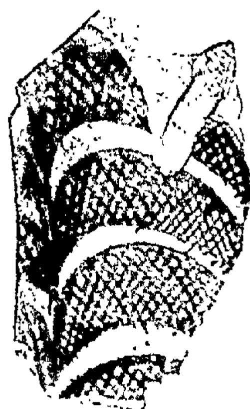
5 6 7 8



9 10 11 12



13



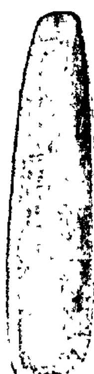
14



15



16



17

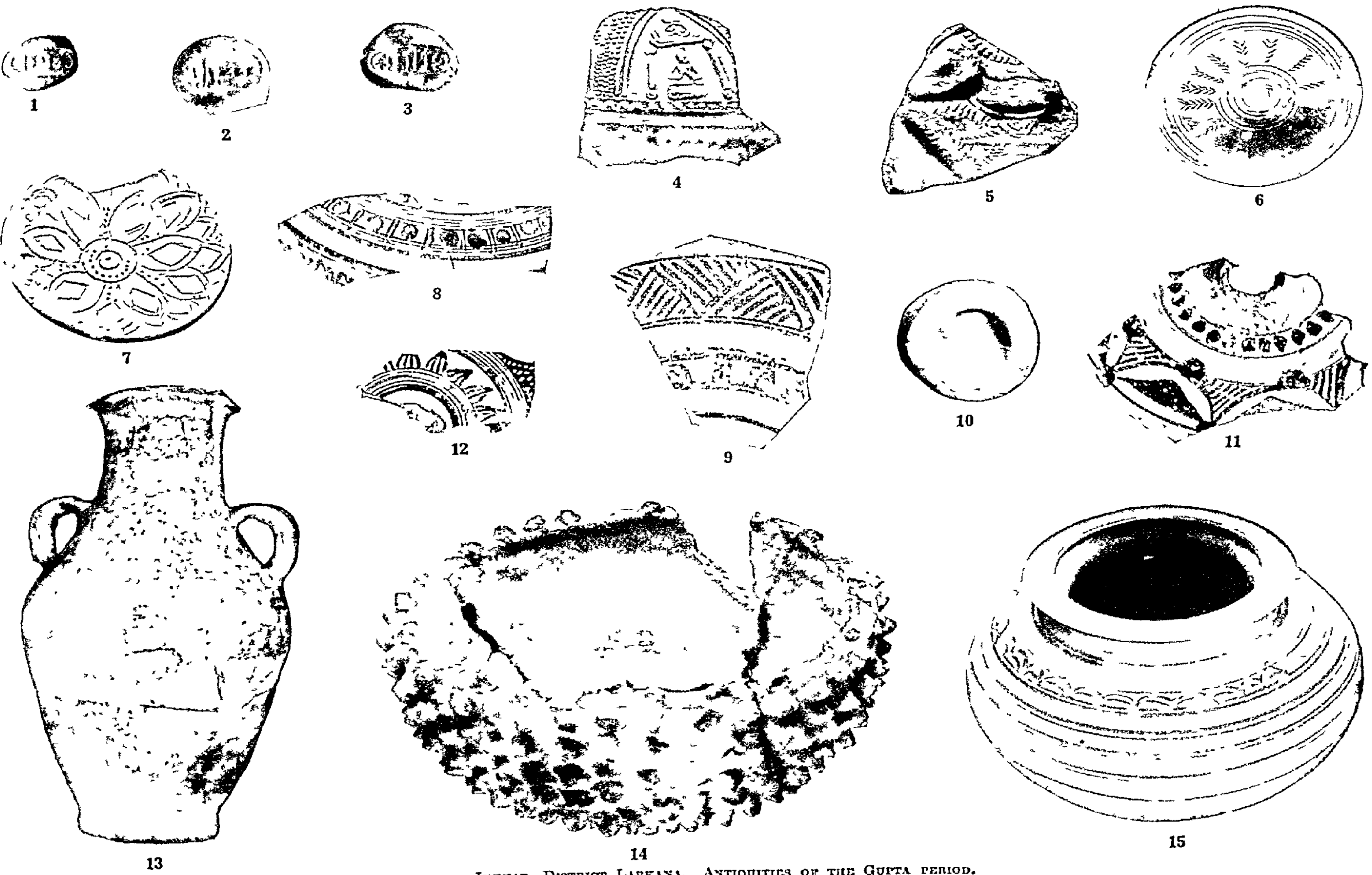


18



19

JHUKAR, DISTRICT LARKANA. PREHISTORIC ANTIQUITIES.



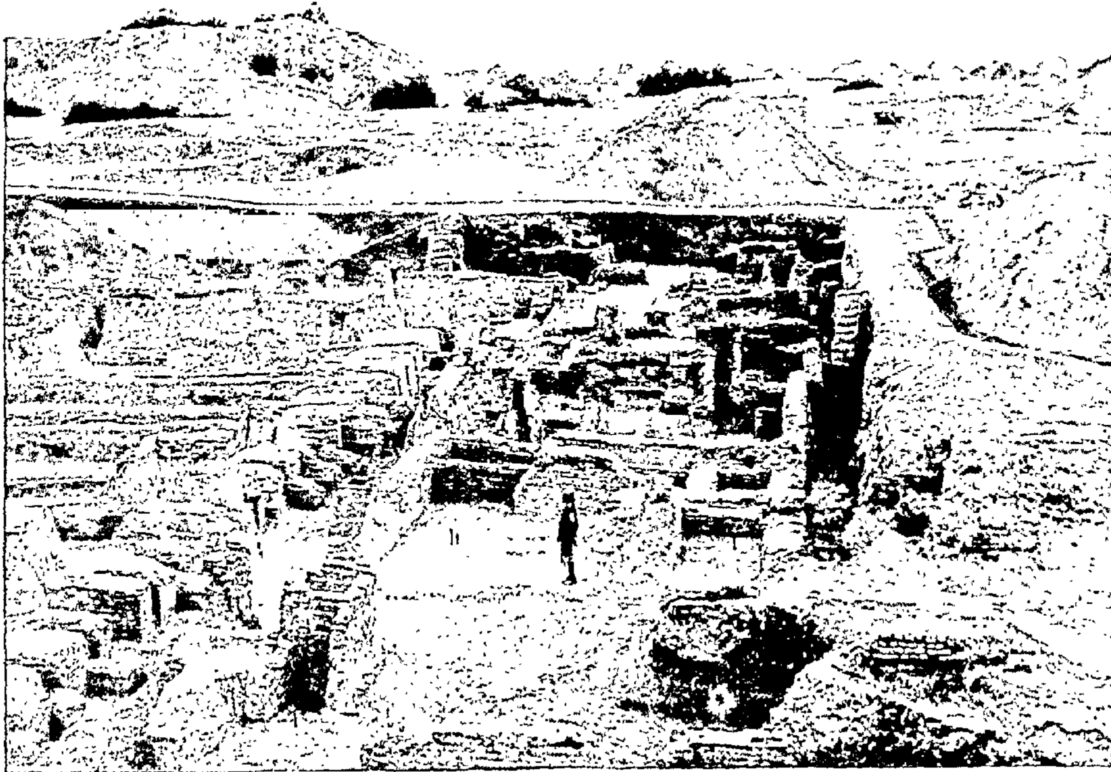
Jhukar, District Larkana. Antiquities of the Gupta period.



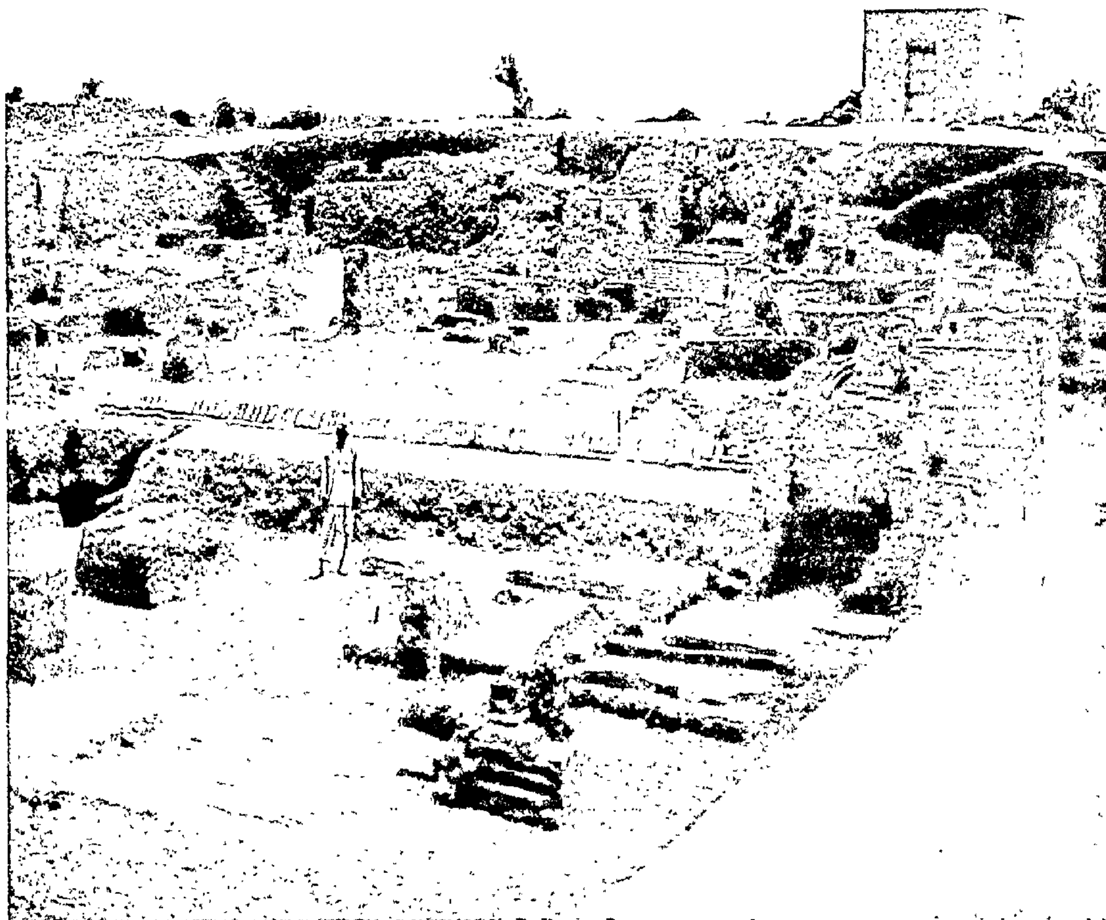
(a) ALLAHABAD FORT. TWO ABACI LYING IN THE ENCLOSURE AROUND THE ASOKA COLUMN.



(b) HARAPPA. MOUND A B. SAUCER-SHAPED DEPRESSION IN EXPANSION OF PITS I AND II.



(*a*) HARAPPA. MOUND F, PARALLEL WALLS AREA; WESTERN EXTENSION, FROM NORTH.



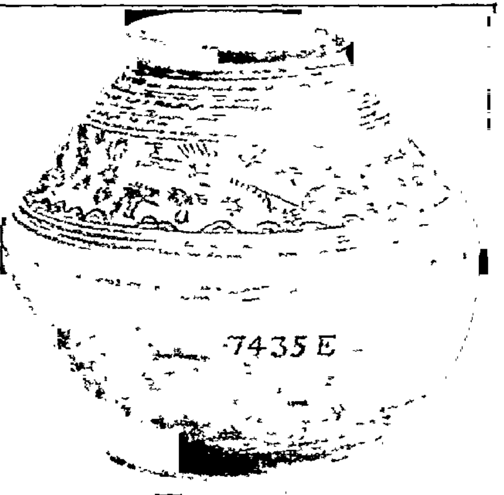
(*b*) HARAPPA. MOUND A-B. EXPANSION OF PITS I AND II; GENERAL VIEW OF PAVEMENTS, SHED OVER SKELETAL REMAINS, ETC., FROM NORTH-WEST.



(a) HARAPPA. SEVEN BURIAL JARS NOS. 7435 A TO G, CLOSE TO THE CART ROAD CROSSING MOUNDS D AND E.



(b) HARAPPA. BURIAL JAR NO. 7435 F.



(c) HARAPPA. BURIAL JAR NO. 7435 E.



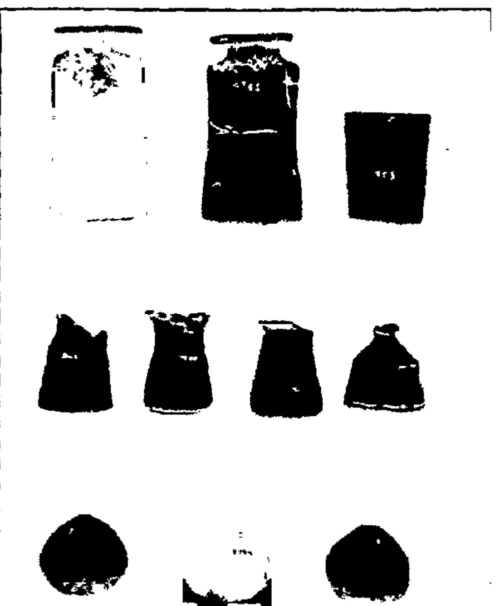
(d) HARAPPA. HUMAN SKULL NO. 1 FROM BURIAL JAR NO. 3934 C.



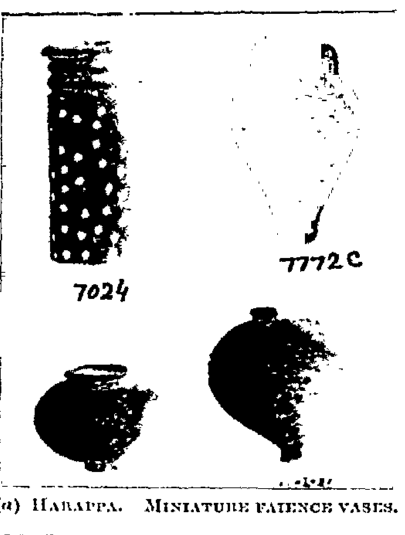
(e) HARAPPA. BURIAL JAR NO 7435 G, WITH CONTENTS.



(f) HARAPPA. BURIAL JAR NO. 7435 B.



(g) HARAPPA. POTTERY TYPES.



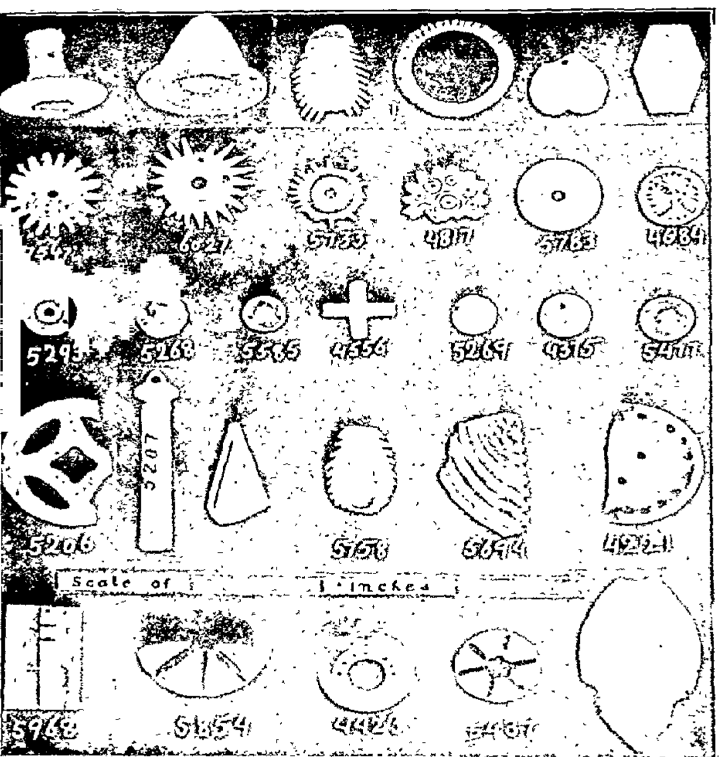
(a) HARAPPA. MINIATURE FAIENCE VASES.



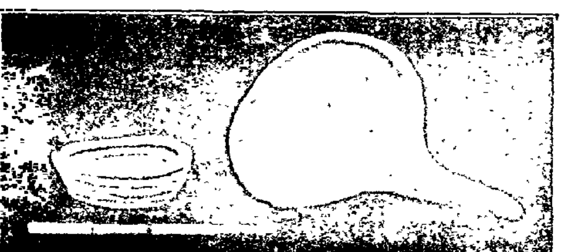
(b) HARAPPA. SEALINGS.



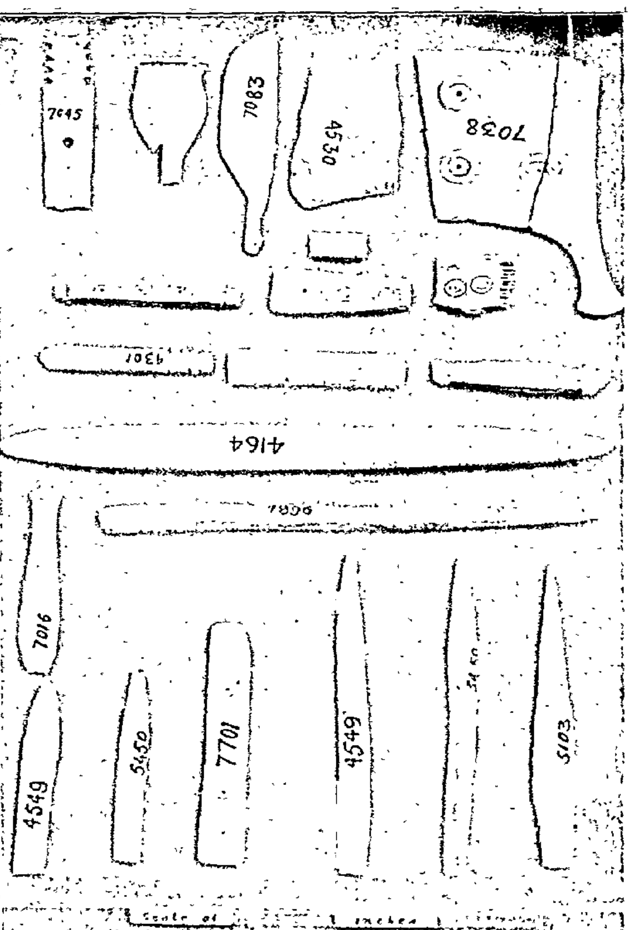
(e) HARAPPA. GOLD OBJECTS.



(c) HARAPPA. ORNAMENTAL OBJECTS OF FAIENCE, PASTE AND SHELL.

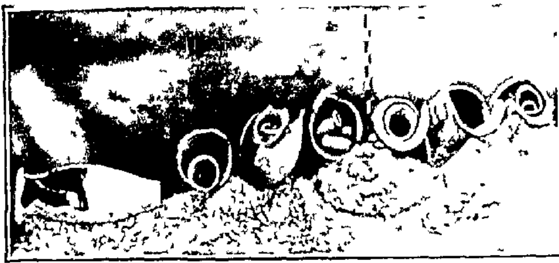


(f) HARAPPA. TERRACOTTA BASKET AND SPOON.



(d) HARAPPA. MISCELLANEOUS IVORY OBJECTS, COMBS, SPATULA, ETC.

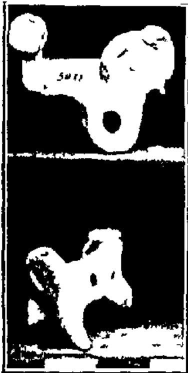
EXPLORATION. HARAPPA, SARNATH AND KHABAKKI.



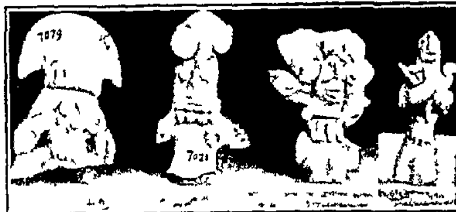
(a) HARAPPA. MOUND F, SEVEN LONG OVAL VASES (4184) in situ.



(b) HARAPPA. PAINTED VASES.



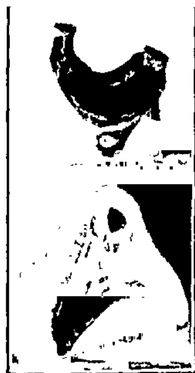
(c) HARAPPA. TERRACOTTA CARTS AND SADDLES.



(d) HARAPPA. HUMAN FIGURINES.



(e) HARAPPA. MOUND F, TRENCH I. TOY ANIMAL AND VASES FROM LOW LEVELS.



(f) HARAPPA. TERRACOTTA CARTS AND SADDLES.



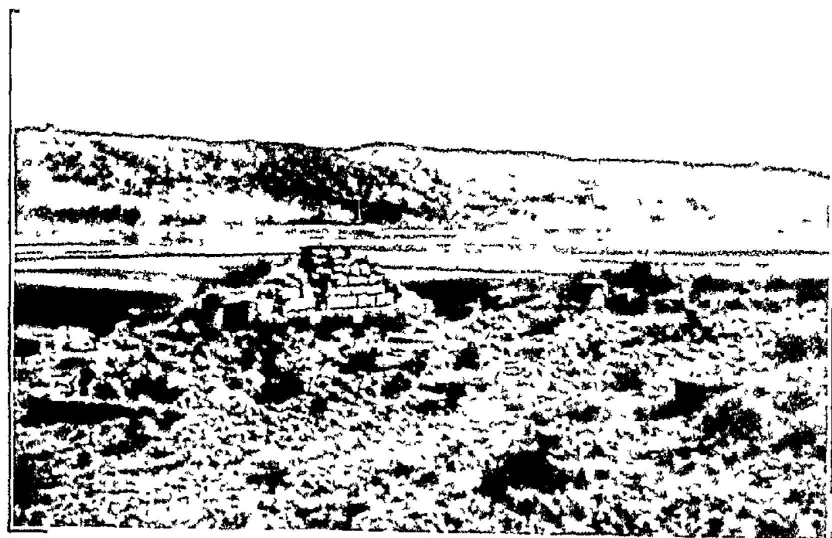
(g) HARAPPA. PAINTED POTSHERDS.



(h) HARAPPA. INCISED POTSHERDS.



(i) SARNATH. COPPER STATUETTE OF FEMALE FROM MONASTERY VI.

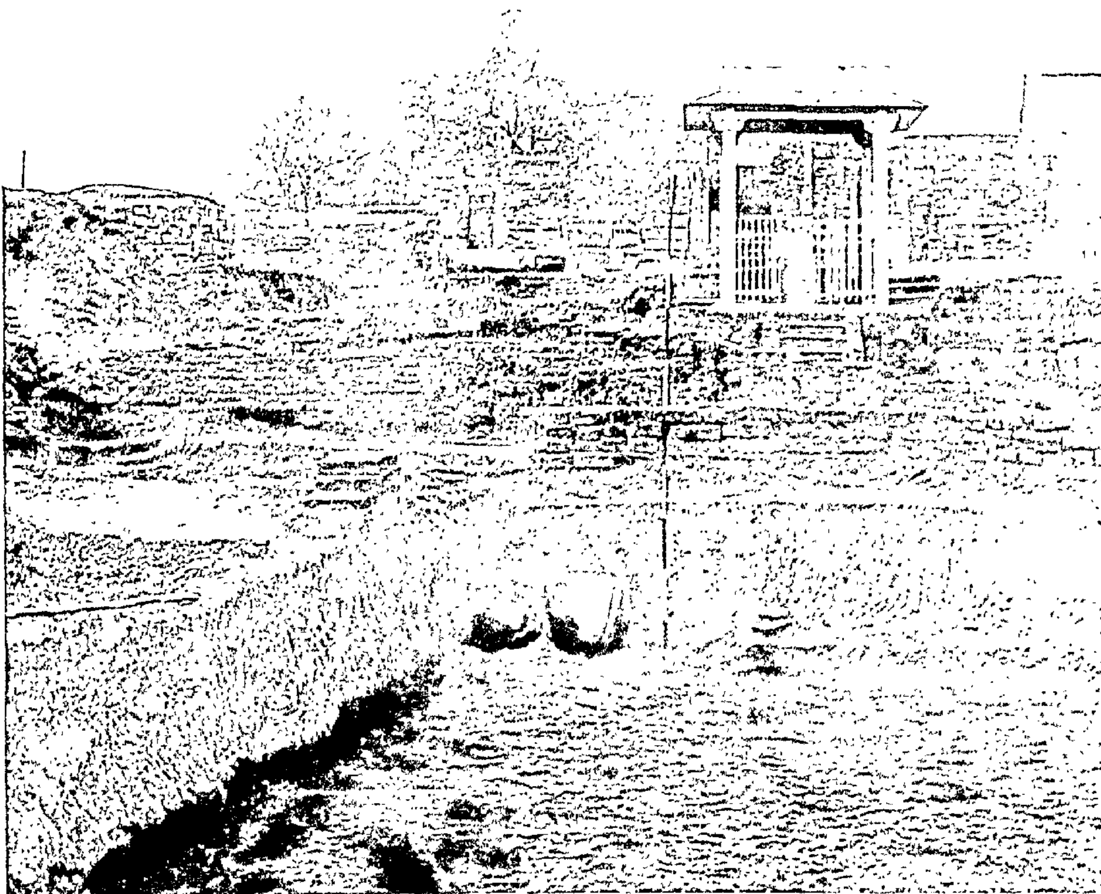


(j) KHABAKKI. PLATFORMS II TO 15 ON THE SOUTHERN SHORE OF THE LAKE FROM SOUTH WEST.

EXPLORATION. SARNATH.



(a) SARNATH. NORTH-WESTERN AREA AFTER EXCAVATION.



(b) SARNATH. EXCAVATION WEST OF ASOKA PILLAR.

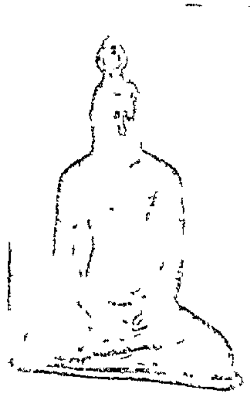
EXPLORATION. SARNATH. ACQUISITIONS TO THE INDIAN MUSEUM.



1-7. ANTIQUITIES FROM SARNATH. 8-14. ACQUISITIONS TO THE INDIAN MUSEUM.



1



2

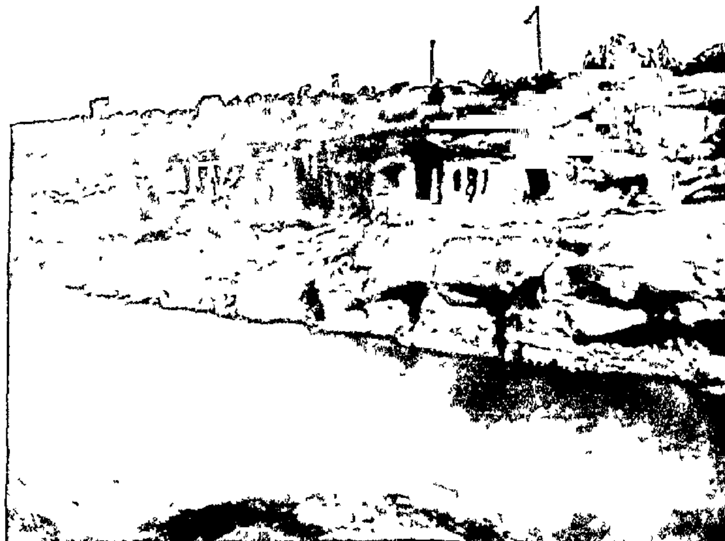


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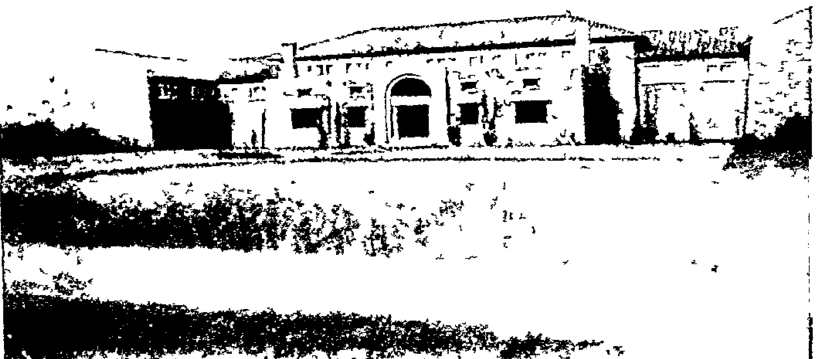
4

1-4. ACQUISITIONS TO THE INDIAN MUSEUM.



5

5 GENERAL VIEW OF THE SILAHARA CAVES, REWAH STATE.



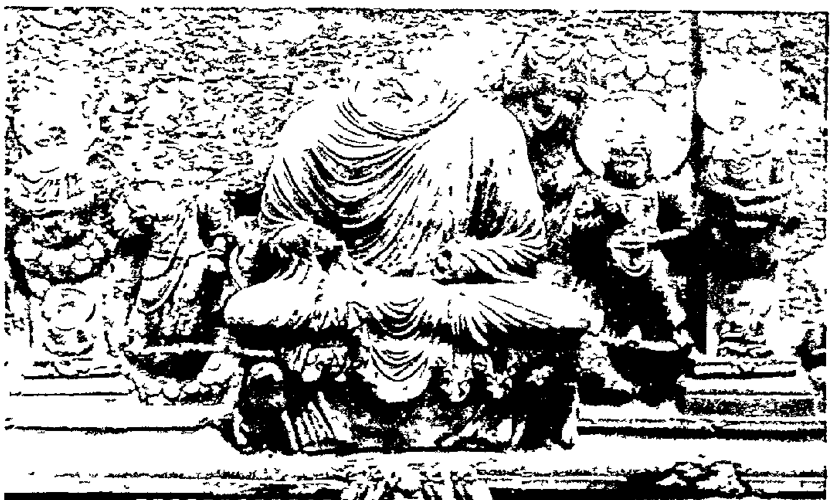
(a) THE NEW MUSEUM AT TAXILA, FROM NORTH-EAST.



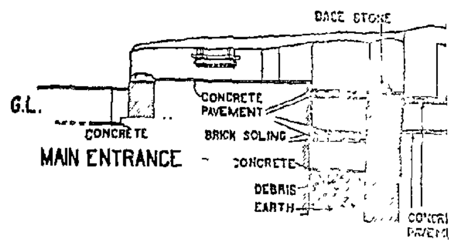
(b) INTERIOR OF SOUTH AND CENTRAL GALLERIES.

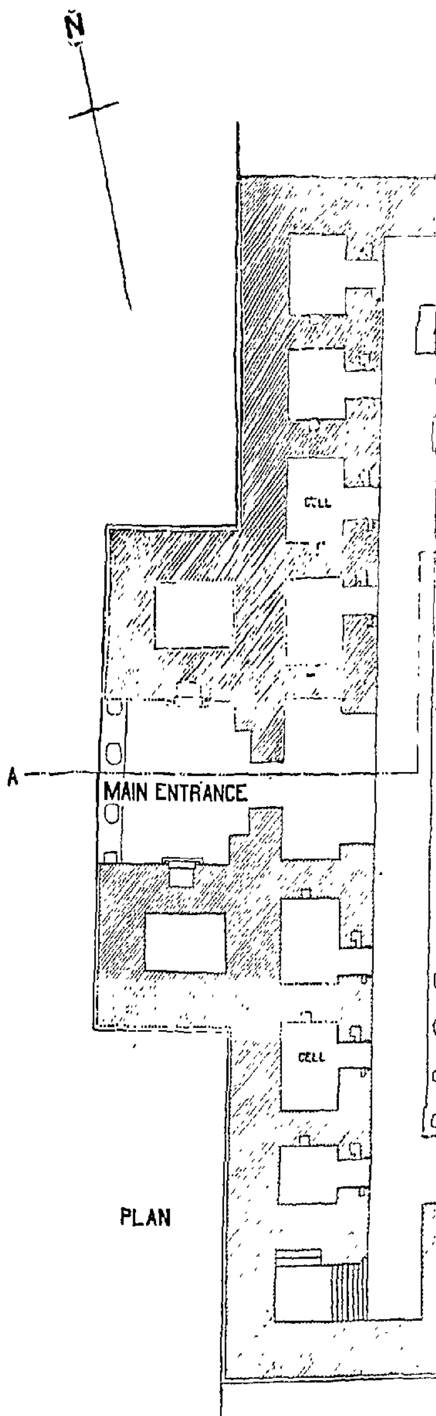


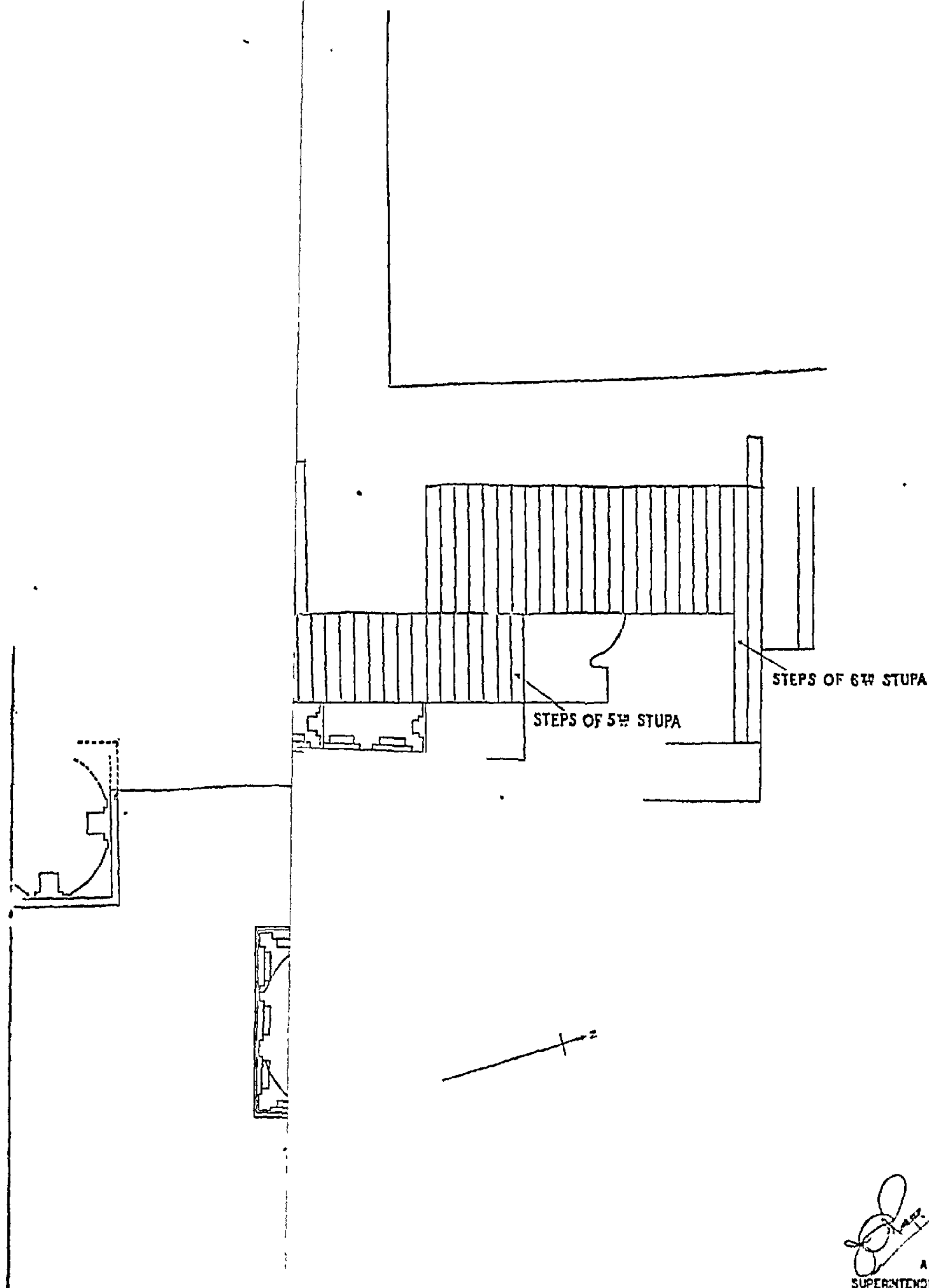
(c) CORNER OF THE NORTH GALLERY.



(d) GROUP OF STUCCO FIGURES FROM MOHRA MORADU STUPA, SET UP IN THE MUSEUM.


BASE STONE
G.L.
CONCRETE
MAIN ENTRANCE
CONCRETE
PAVEMENT
BRICK SOLING
CONCRETE
DEBRIS
EARTH

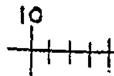

N
CELL
A
MAIN ENTRANCE
CELL
PLAN

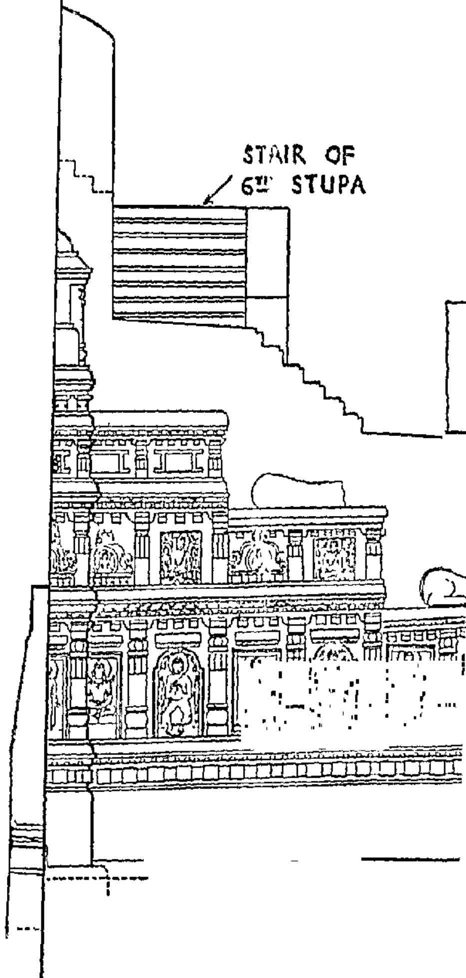


A.R.I.B.A
SUPERINTENDENT
ARCHÆOLOGICAL SURVEY
CENTRAL CIRCLE

NALA

EA

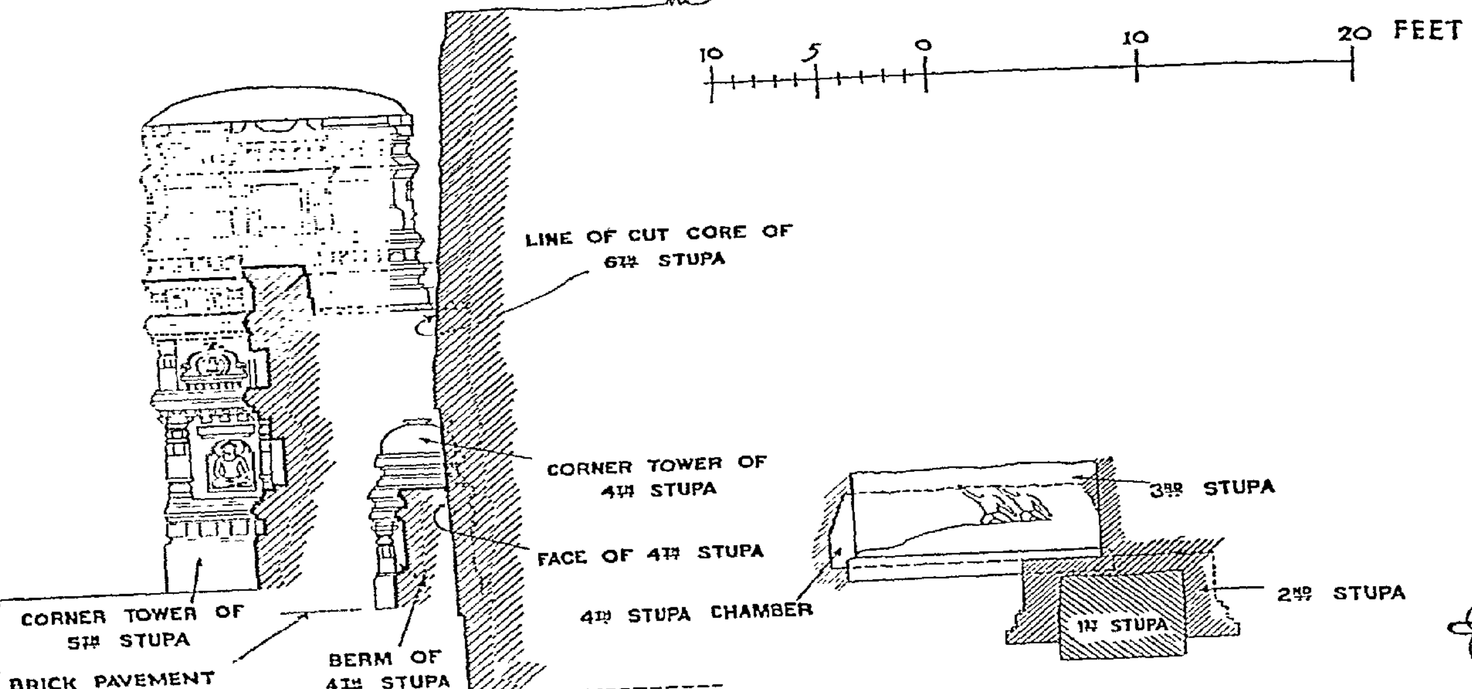




NALANDA EXCAVATIONS

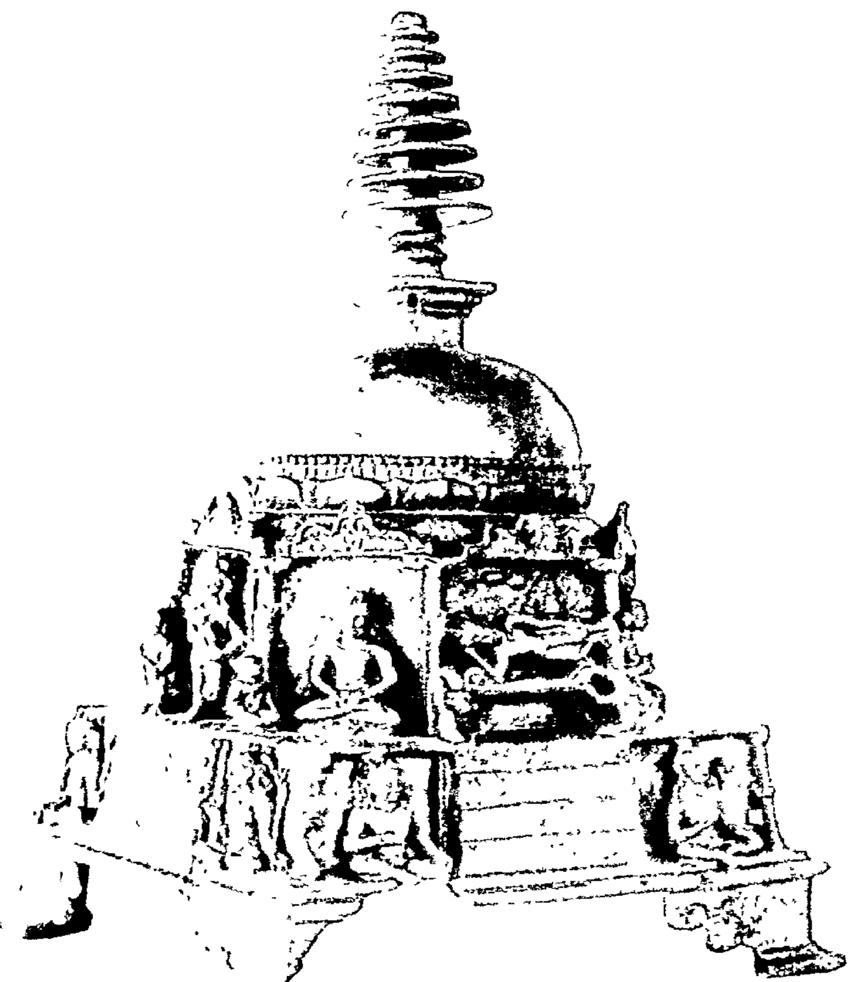
STUPA SITE Nº 3

SECTION THROUGH EAST FACADE SHOWING EARLIEST STUPAS IN MOUND



SECTION ON A.B.

SUPDT
ARCHÆOLOGICAL SURVEY.
CENTRAL CIRCLE.

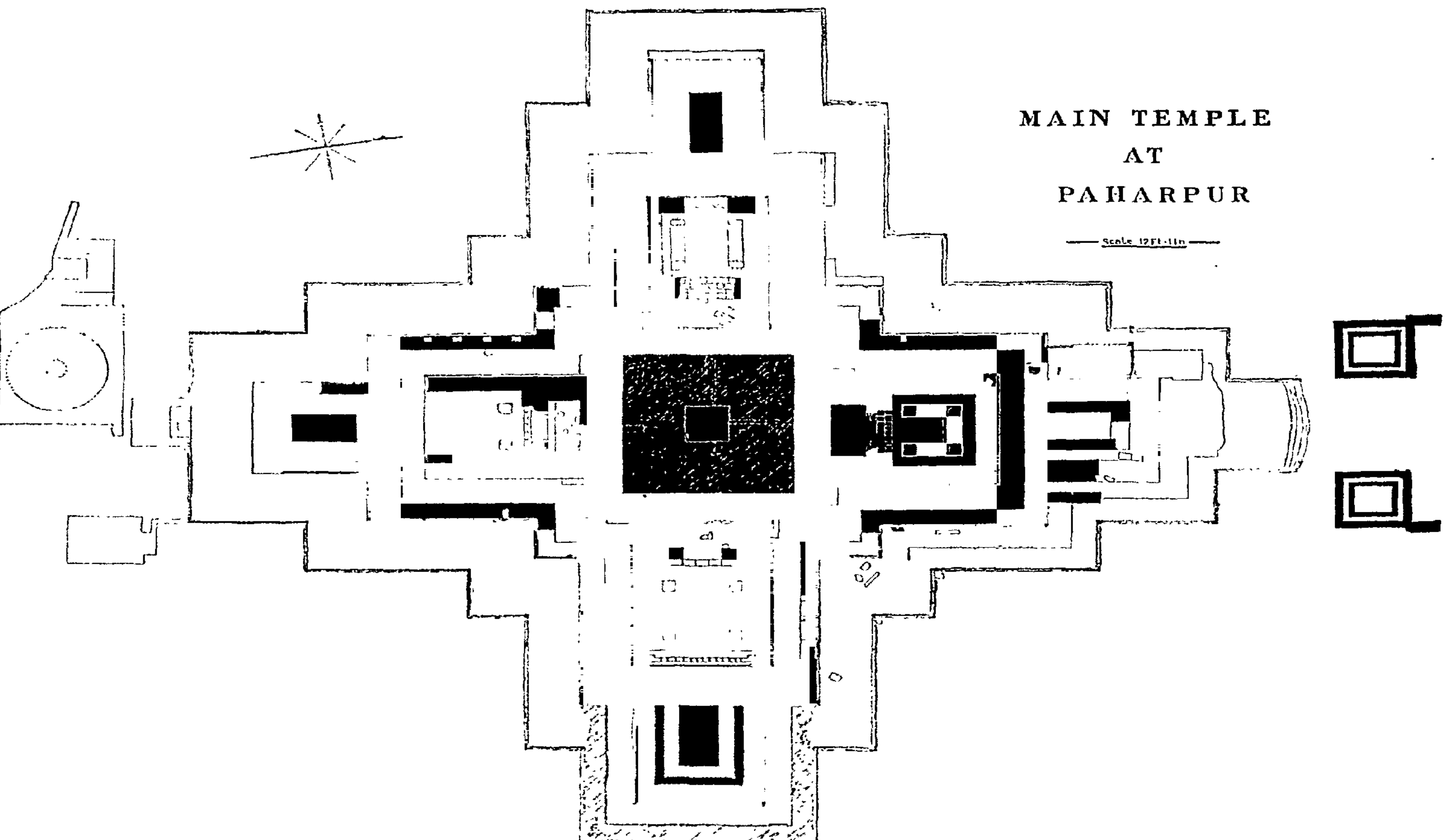


(a) NALANDA. BRONZE STŪPA FROM MONASTERY SITE No. 1, DEVAPĀLA STRATUM, PORTRAYING EIGHT SCENES FROM THE LIFE OF BUDDHA. FOUND 1926 27 (AFTER CLEANING).

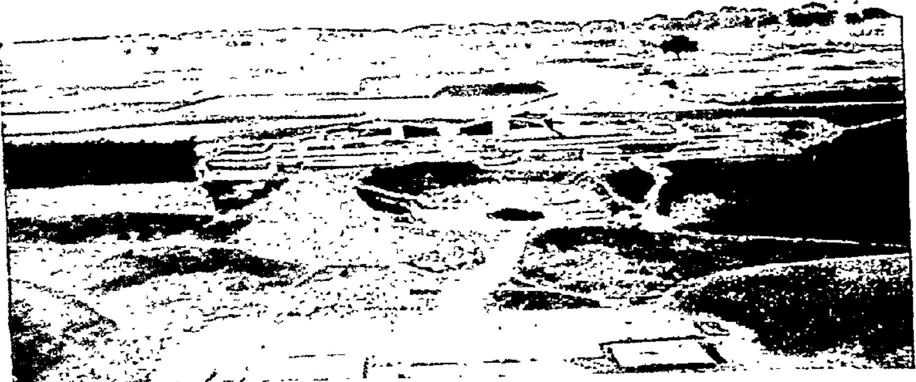


(b) NALANDA. BRONZE IMAGE OF TĀRĀ, EIGHTEEN-ARMED, FROM MONASTERY SITE No. 1, DEVAPĀLA STRATUM. FOUND 1926-27. (AFTER CLEANING).

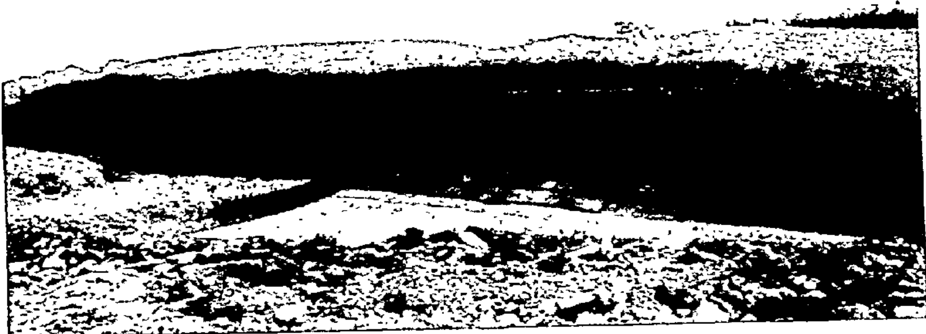
EXPLORATION. PAHARPUR.



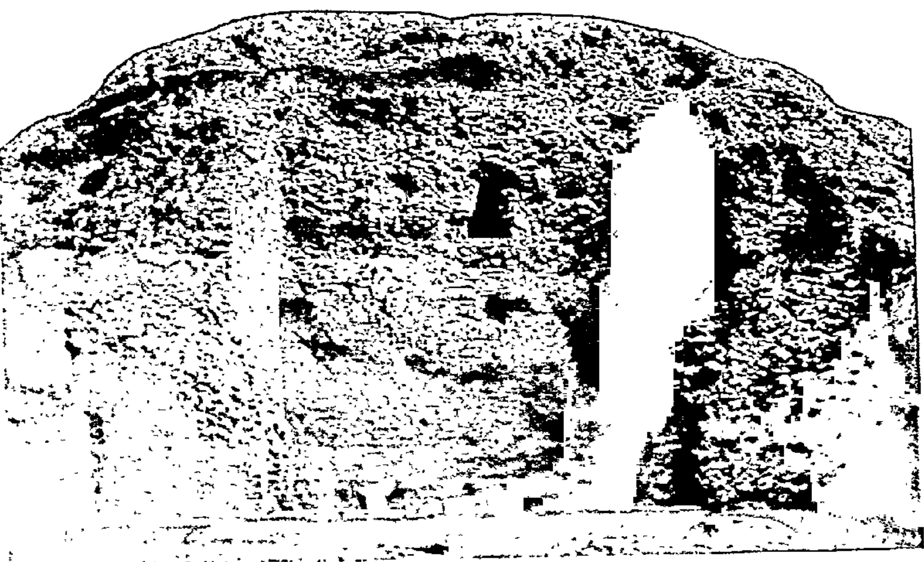
EXPLORATION. PAHARPUR.



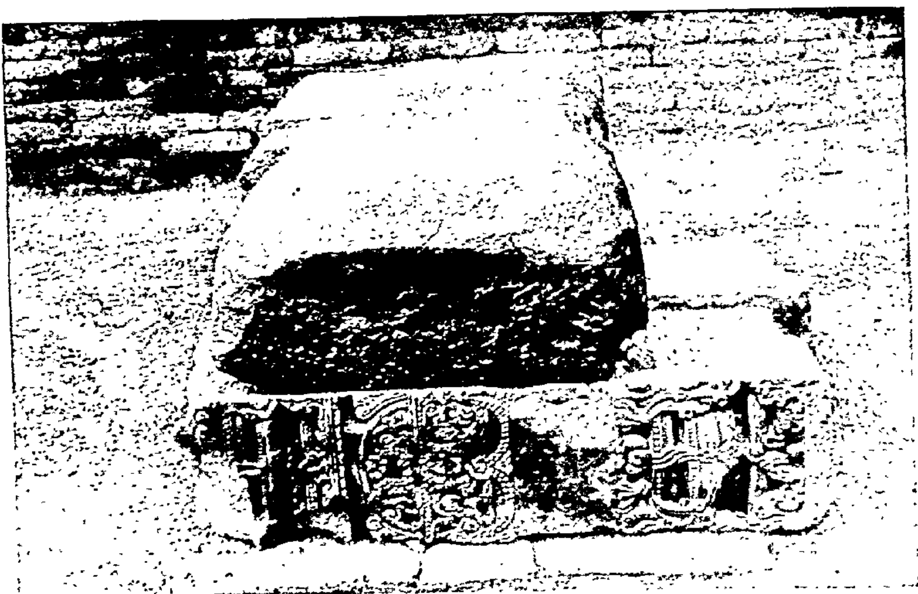
(a) PAHARPUR. GENERAL VIEW OF EXCAVATIONS IN NORTH GATE AREA.



(b) PAHARPUR. BATHING PLATFORM, SOUTH OF MONASTERY ENCLOSURE.



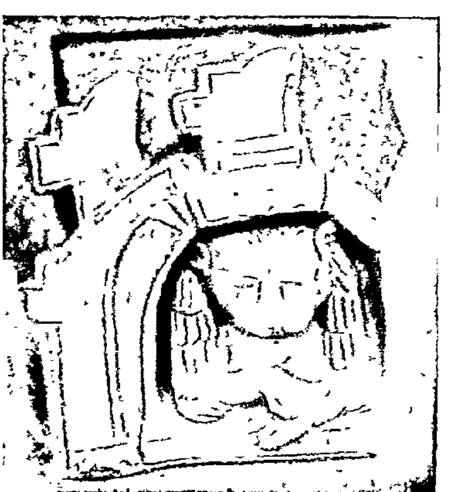
(c) PAHARPUR. SOUTHERN MANDAPA AND ANTE-CHAMBER OF MAIN TEMPLE, SHOWING NICHE AND STAIRWAY.



(d) PAHARPUR. PILLAR BASE OF GUPTA PERIOD IN WESTERN MANDAPA.

EXPLORATION. PAHARPUR.

Paharpur. Main Temple. Terracotta plaques illustrating fables, etc.



(a) Lion in cave.



(b) Monkey pulling out wedge.



(c) Monkey holding bunch of mangoes.



and mice.



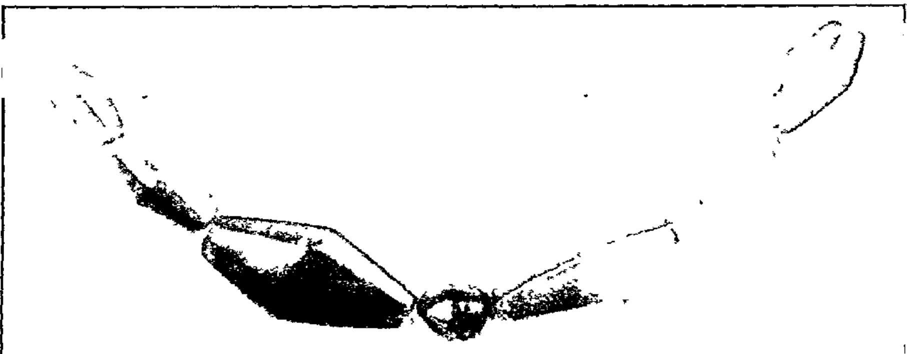
(e) Mungoose and cobra.



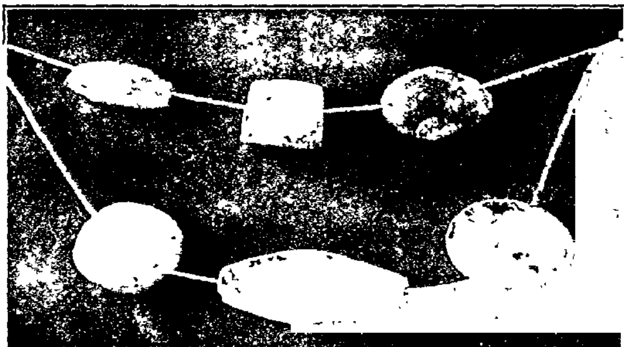
(f) Vidyadhara on rhinoceros.

EXPLORATION. PAHARPUR.

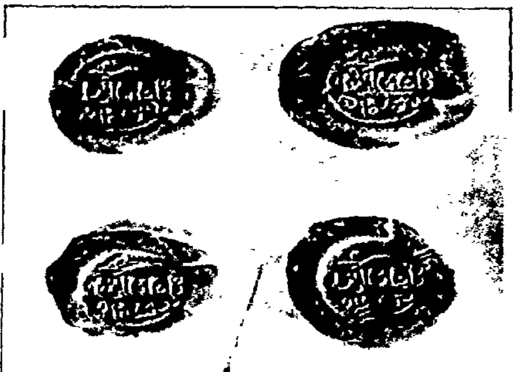
MISCELLANEOUS ANTIQUITIES FROM PAHARPUR.



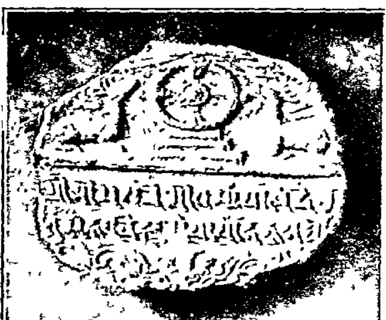
(a) CORNELIAN BEADS.



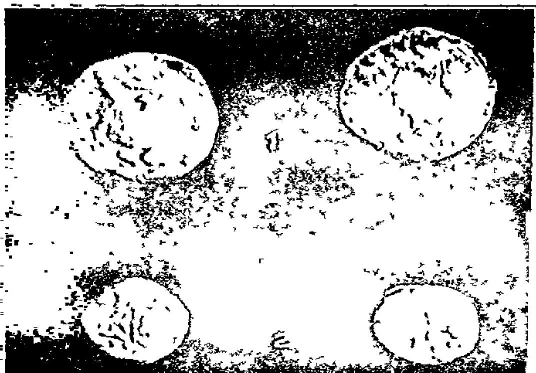
(b) MISCELLANEOUS BEADS.



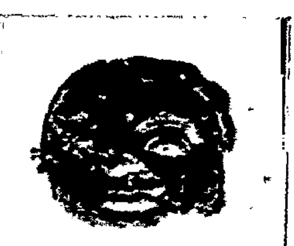
(c) SEALS OF DHARMASENA.



(d) SEAL OF THE DHARMAPĀLA-VIHĀRA.



(e) COPPER COINS.



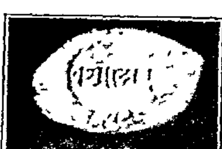
( )



(g)



(h)

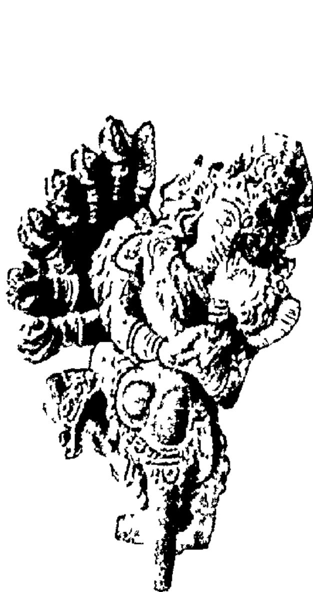


(i) SEAL OF DHARMASENA.



(j) SEALS OF SIMHASENA.

EXPLORATION, PAHARPUR, SABHAR, JHEWARI, SIBSAGAR, NAPUKUR AND DHARMANAGAR.



(*a*) Paharpur. Stone image of Hevajra.



(*b*) Vishnu Tablet from Sabhar.



(*c*) Bronze Vasudhārā from Jhewari.



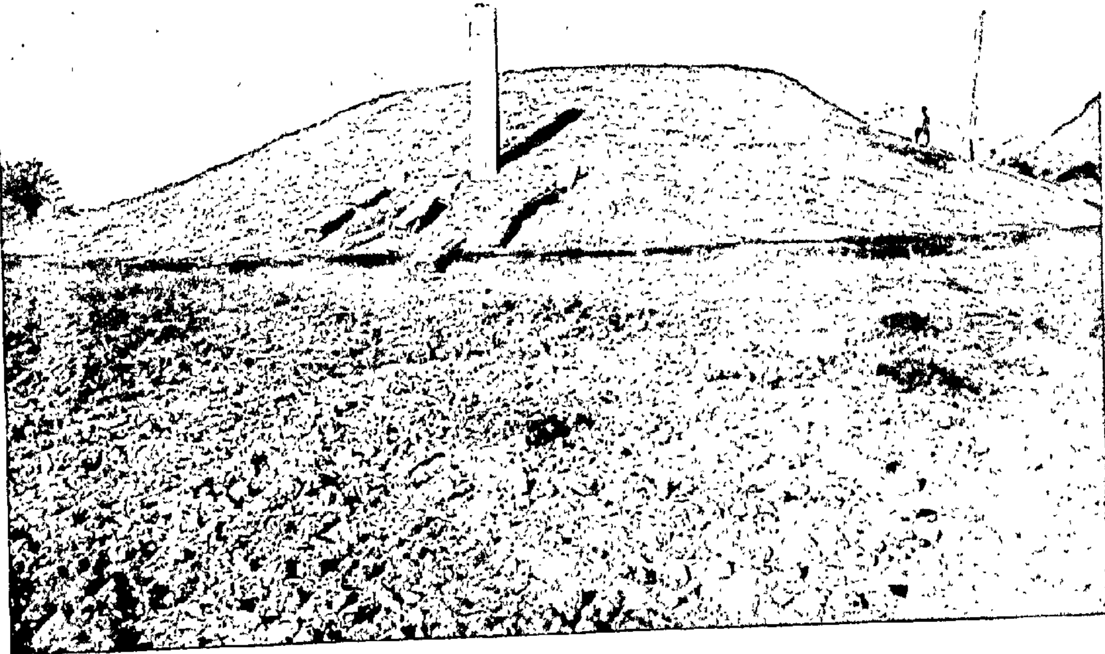
(*d*) Stone image at Sibsagar, Assam.



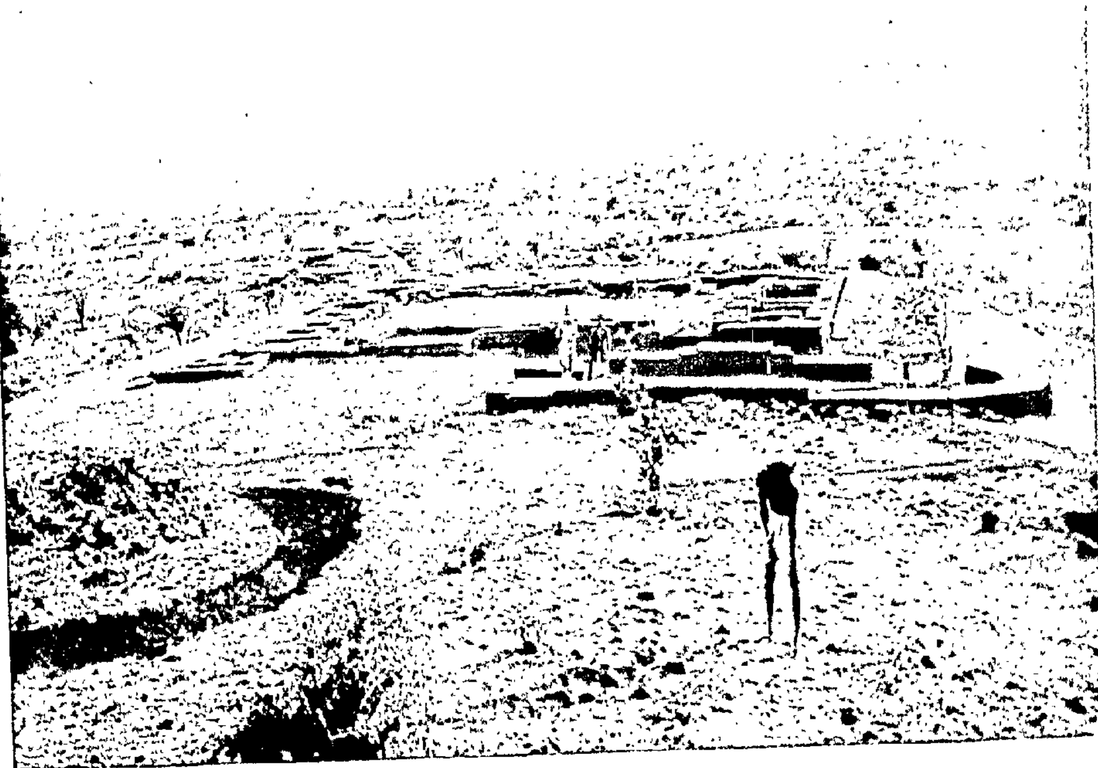
(*e*) Stone Vasudhārā image from Napukur, Murshidabad.



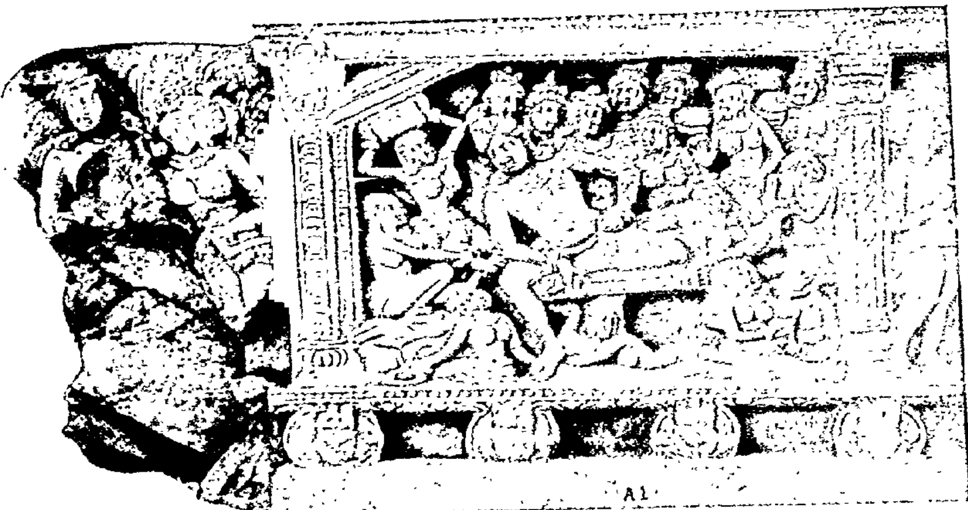
(*f*) Hevajra image, bronze, from Dharmanagar, Tripura State.



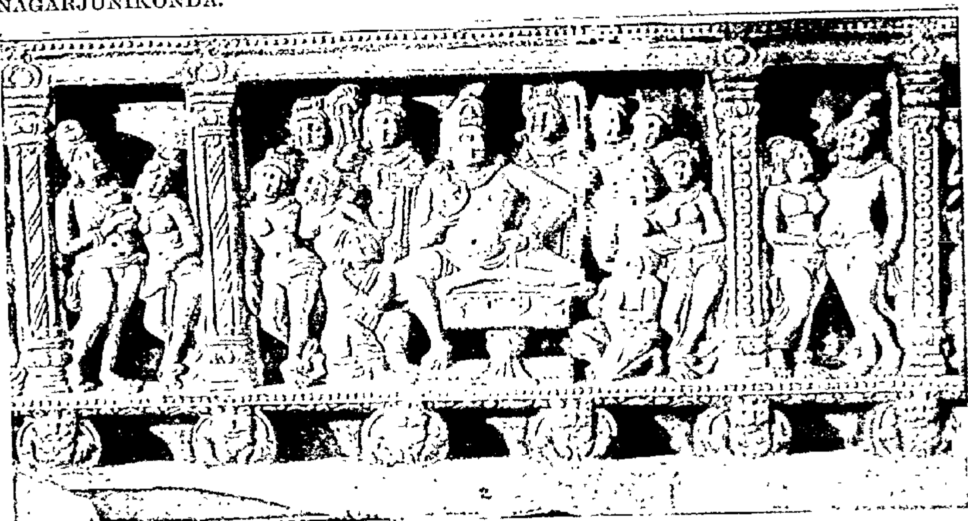
(a) THE GREAT STUPA AT NAGARJUNIKONDA.



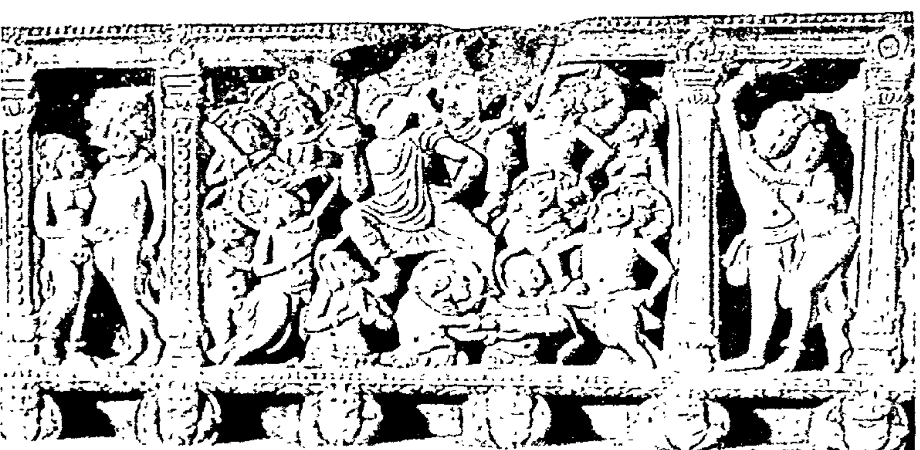
(b) NAGARJUNIKONDA. NAHARALLABODU. EXCAVATED MONASTERY AND APSIDAL TEMPLE.



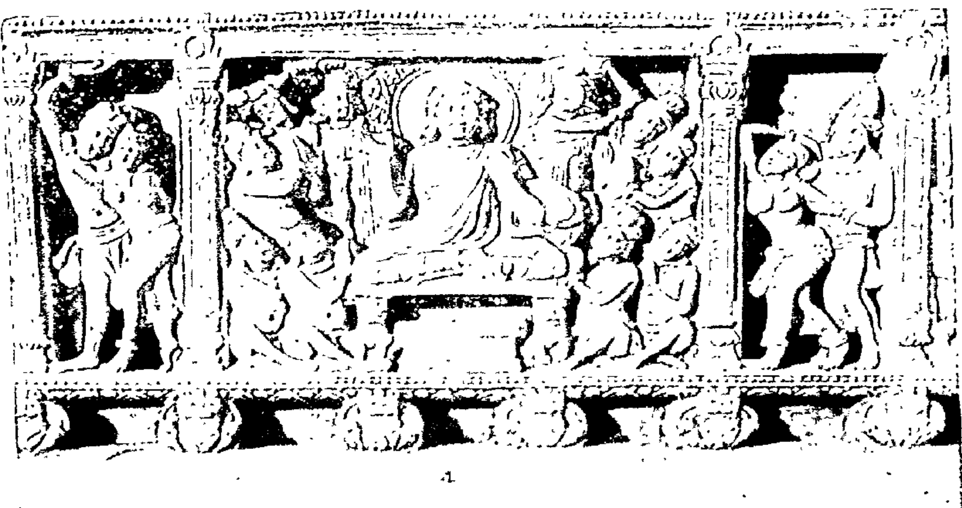
(*a*)



(*b*)

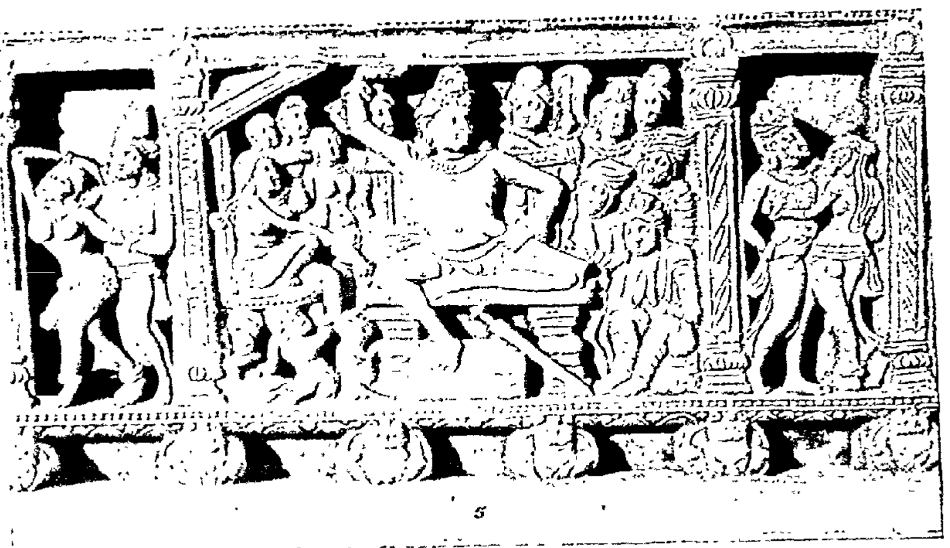


(*c*)

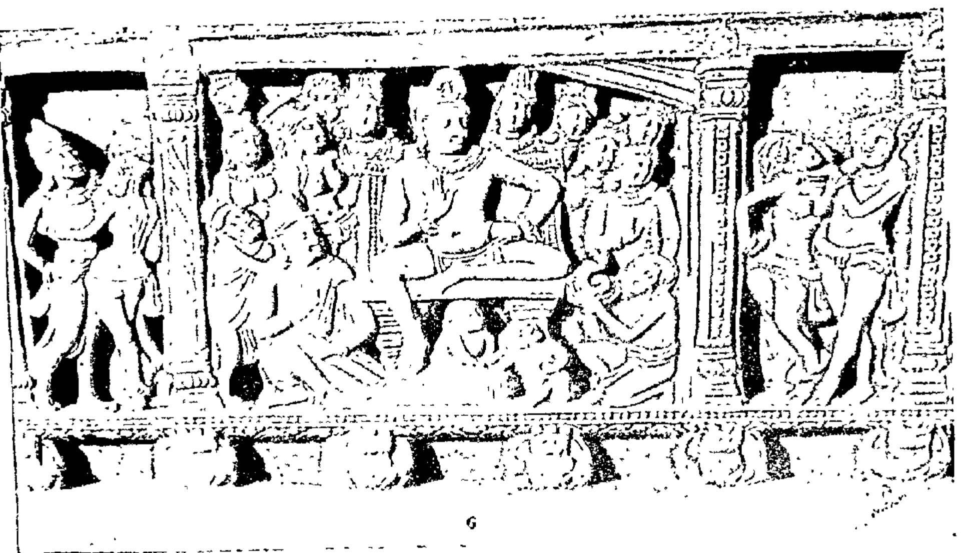


(*d*)

(*a*) *to* (*d*) BEAM A, PANELS 1-4.



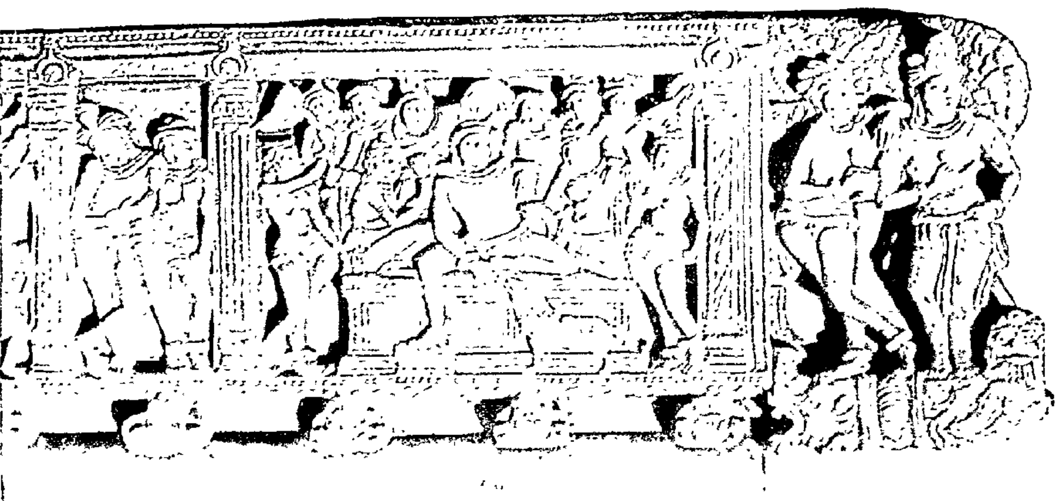
(a)



(b)

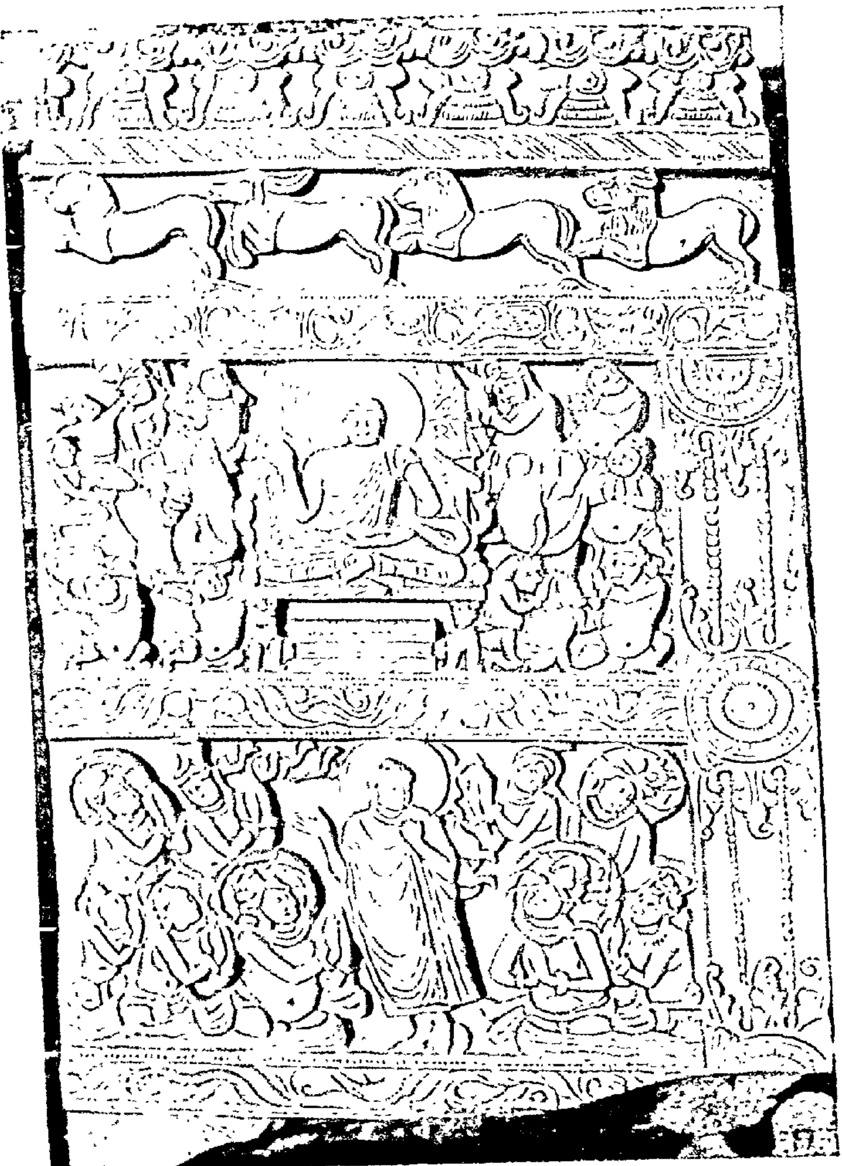


(c)



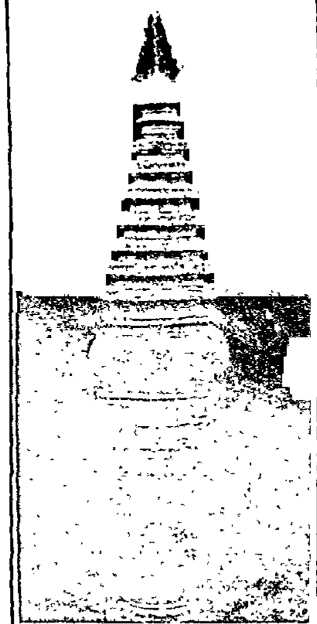
(d)

(a) to (c) BEAM A, PANELS 5-7. (d) BEAM B, END PANEL.



(a) NAGARJUNIKONDA. SCULPTURED SLAB FROM STUPA No. 2.

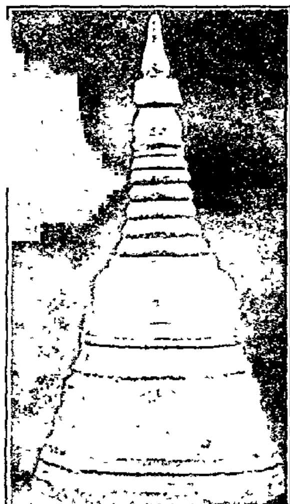
(b) NAGARJUNIKONDA. BAS-RELIEF FROM STUPA No. 2.



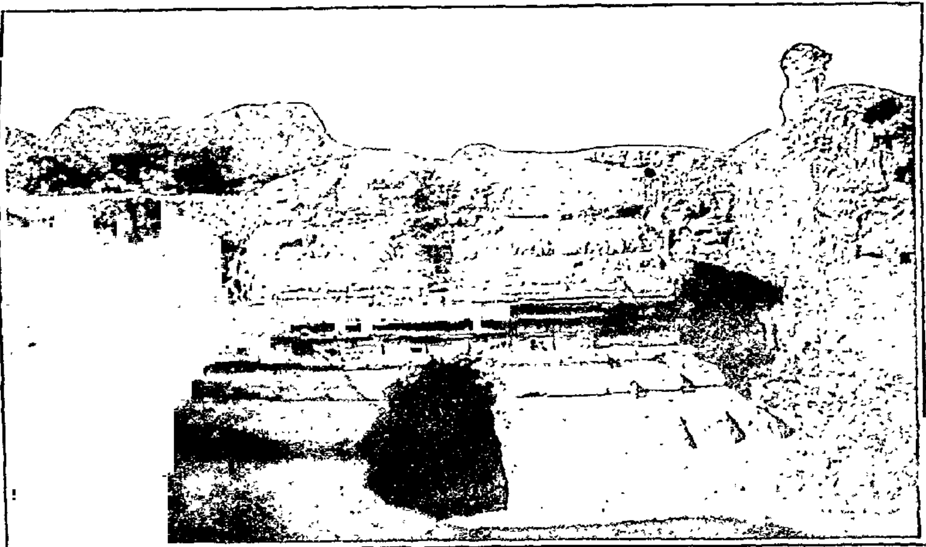
(a) PAGAN. REMAINS OF A PEDESTAL EXCAVATED IN A MOUND NEAR SULAMANI TEMPLE.



(b) PAGAN. BUDDHA FOUND IN A RUINED TEMPLE AT NATPALLIN.



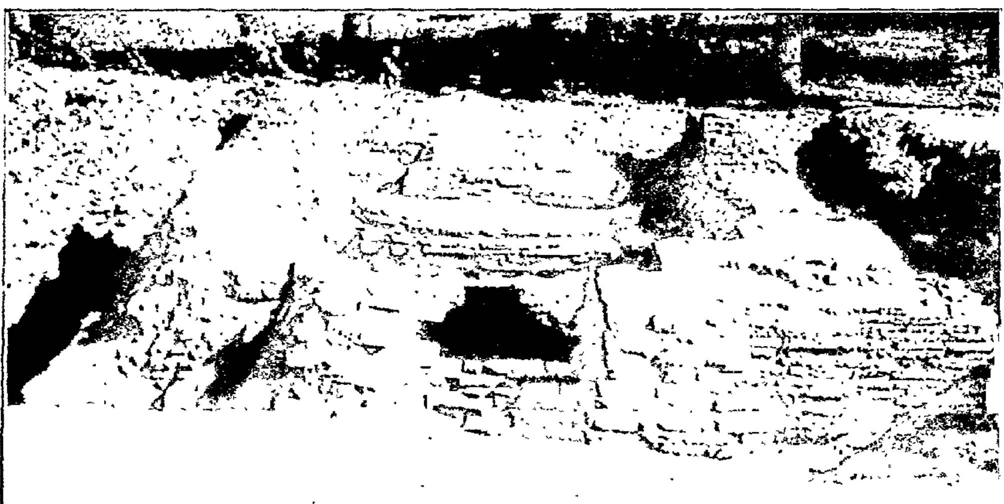
(c) PAGAN. A BRONZE STŪPA-SHAPED OBJECT (FINIAL ?).



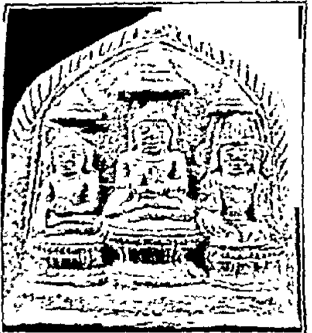
... AN EXCAVATED PEDESTAL.



(e) PAGAN. FIGURE OF JAMBUPATI FOUND IN ... ALLIN.



(f) PAGAN. BRONZE STŪPA (HT. 9") FOUND IN A RUINED TEMPLE AT



(a) PAGAN. A BRONZE VOTIVE TABLET.

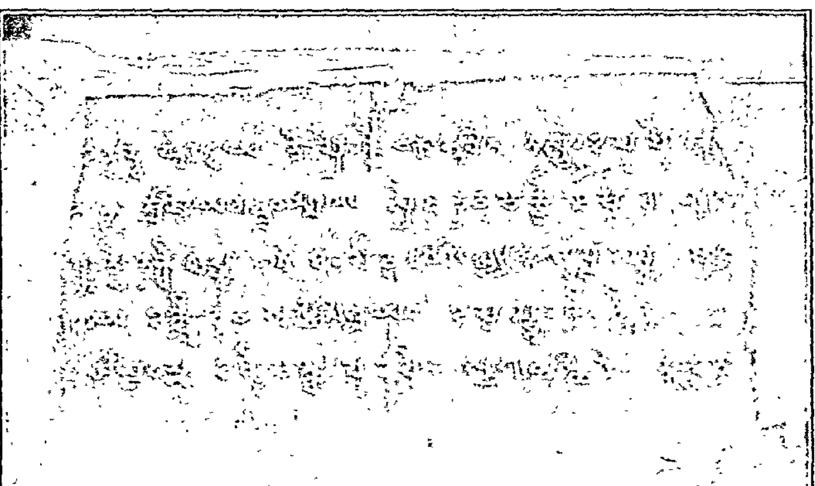


(b) HMAWZA. BUDDHA.

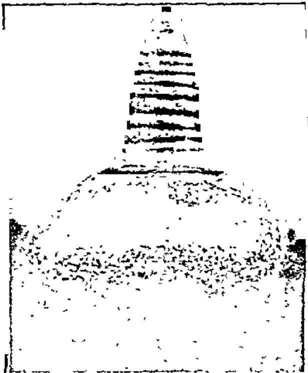




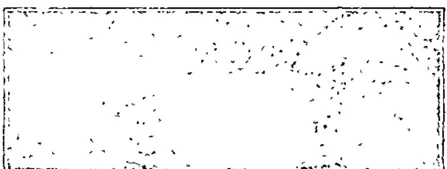
(c) PAGAN. VIEW OF A RUINED TEMPLE AT NATPALLIN.



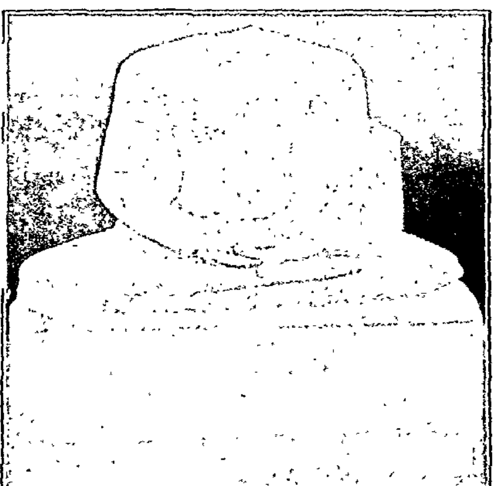
(f) HMAWZA. PART OF INSCRIPTION ROUND THE PEDESTAL OF BUDDHA (H).



(d) PAGAN. A RELIC CASKET.



(e) HMAWZA. BRONZE HAND AND HEAD OF A BUDDHA FIGURE.



(h) HMAWZA. EXCAVATED HEADLESS BUDDHA WITH INSCRIBED PEDESTAL.



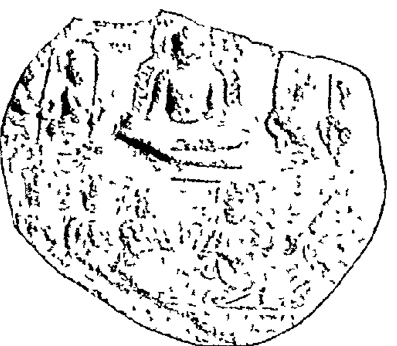
1



2



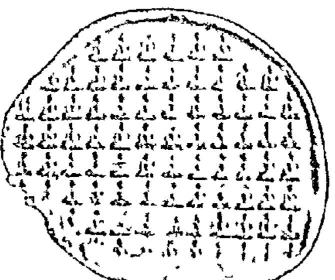
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4



5

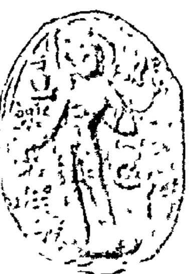


6

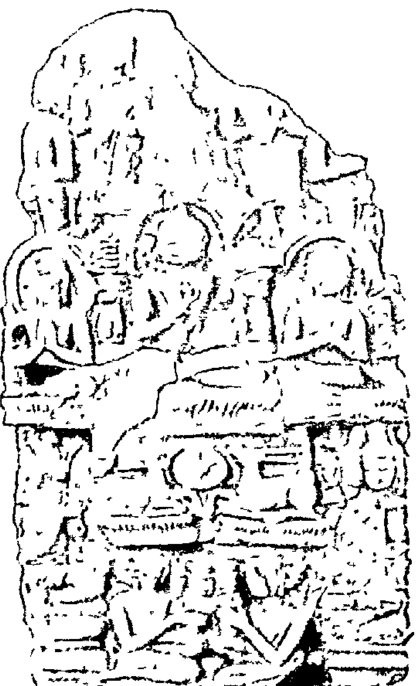


7





8



10

9

–8 Hmawza. Terracotta votive tablets.

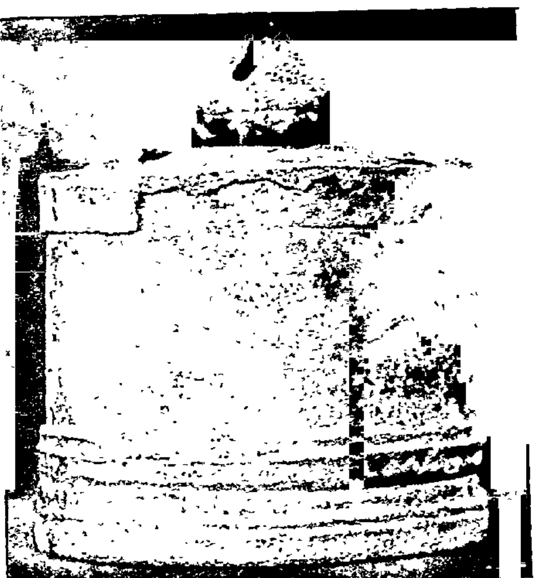
9 and 10. Fragmentary stone reliefs.



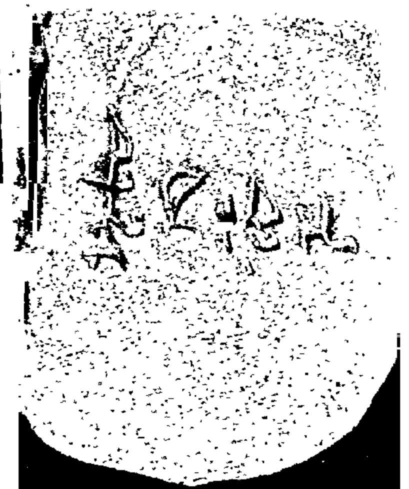
(*a*) HMAWZA. EARTHEN FUNERAL URNS.



(*b*) HMAWZA. A STUPA ENCASED IN ANOTHER AT A MOUND IN THAUNGBYEGÔN.



(*c*) HMAWZA. BRONZE FUNERAL URN.

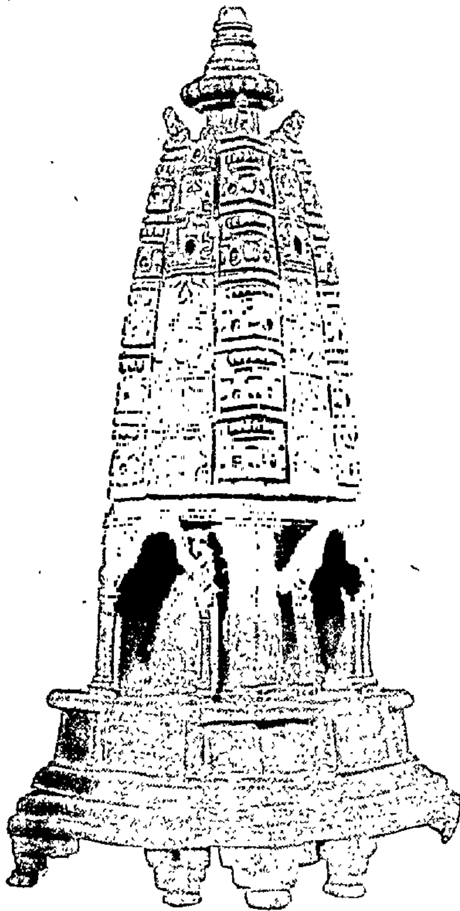


(*d*) HMAWZA. TERRACOTTA VOTIVE TABLET.



(*e*) HMAWZA. FRAGMENTS OF BONES: CONTENTS OF BRONZE FUNERAL URN (*c*).

TREASURE TROVE. BRONZE ANTIQUITIES FROM JHEWARI.



(a) MINIATURE TEMPLE.



(b) INSCRIBED AND PAINTED IMAGE OF BUDDHA IN *bhūmisparśa-mudrā.*





(c) VAJRĀSANA BUDDHA IMAGE.



(d) INSCRIBED IMAGE OF BUDDHA IN *bhūmisparśa-mudrā.*